EMID0012053S0
A4

Service Manual

Electronic Organ

Supplement

REVITION

SX-GN2 / SX-GN3 / SX-FA1

Area
(M) U.S.A.
(MC) Canada
(XM) Mexico
(EN) Norway, Sweden, Denmark, Finland,
(EH) Holland, Belgium
(EF) France, Italy
(EZ) Germany
(EW) Switzerland
(EA) Austria
(EP) Spain, Portugal, Greece
(EK) the United Kingdom
(XL) New Zealand
(XR) Australia
(XS) Malaysia, Singapore, South Africa
(XD) Saudi Arabia, Kuwait
(X) the Middle East, Indonesia, Hong Kong, Thailand
(XT) Taiwan
(XP) Philippines

Change of Disk Drive Unit / (The disk drive unit has been replaced

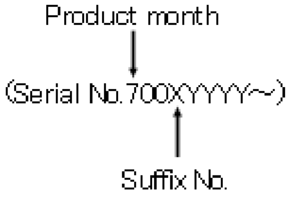
with a new type.)

This document is supplementary to the following Service Manuals.

Technics®

1. Application of change

From JUL.,2000 producton and onward.(Serial No.700XYYYY)


Product month
(Serial No.700XYYYY~)
Suffix No.

Change of Suffix No.

Model No.	Area code	Previous Suffix No.	Actual Suffix No.
SX-GA2	EP, XL, XR, XS, XD, X, XT, XP	A	B
SX-GA3	M, MC, XM, XL, XR, XS, X, XT	B	C
	EN, EH, EK, EF, EA, EP, EW, ZD	C	D
	EZ	D	E
SX-FA1	M, XM, XR, X	B	C

2. Replacement Part List

Ref. No.	Change of Parts No.		Part Name & Description	Re
	Original	Supplement		
CABINET PARTS				
	QAUG017AA	QAUG027AA	DISK DRIVE UNIT	CHANG
	QEUGMSW06D	QEXGZA34015B	CONNECTOR WITH WIRE	CHANG
	—	QMRG5164AA	CUSHION	ADDITIO
PRINTED CIRCUIT BOARED				
	SXPG229211	SXPG235611	FDC P.C.B.	CHANG
INTEGRATED CIRCUIT				
IC15	QSIGCGA3AX	QSIGCGA3AX4	4M bit Program EP ROM	CHANG
PROGRAM DISK				
	—	QUVG2006AA1	PROGRAM PATCH-UP FLOPPY DISK	ADDITIO

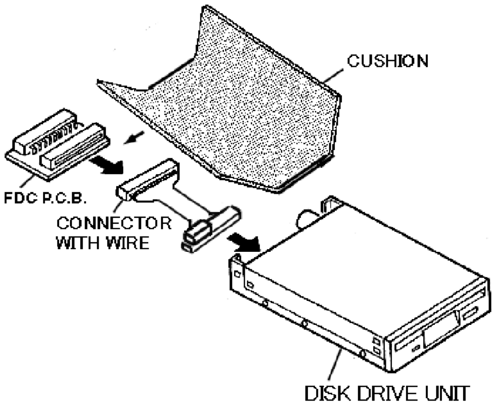
3. Service Guide

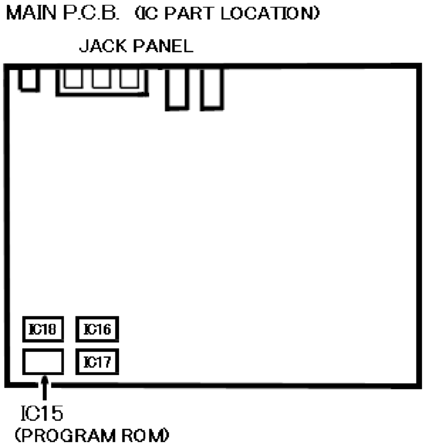
- The substitute FDD unit kit contains parts necessary for installing the new unit.

■ **DISK DRIVE KIT**

DISK DRIVE KIT	CONTENTS	P/S
/ RFKVSXGA2P	QAUG027AA:DISK DRIVE UNIT QEXGZA34015B:CONNECTOR WITH WIRE / QMRG5164AA:CUSHION / SXPG235611:FDC P.C.B. / QSIGCGA3AX4:IC15 / QUVG2006AA1: PROGRAM PATCH-UP FLOPPY DISK	1 / 1 / 1 / 1 / 1 / 1

4. Cabinet Part and Program ROM Location

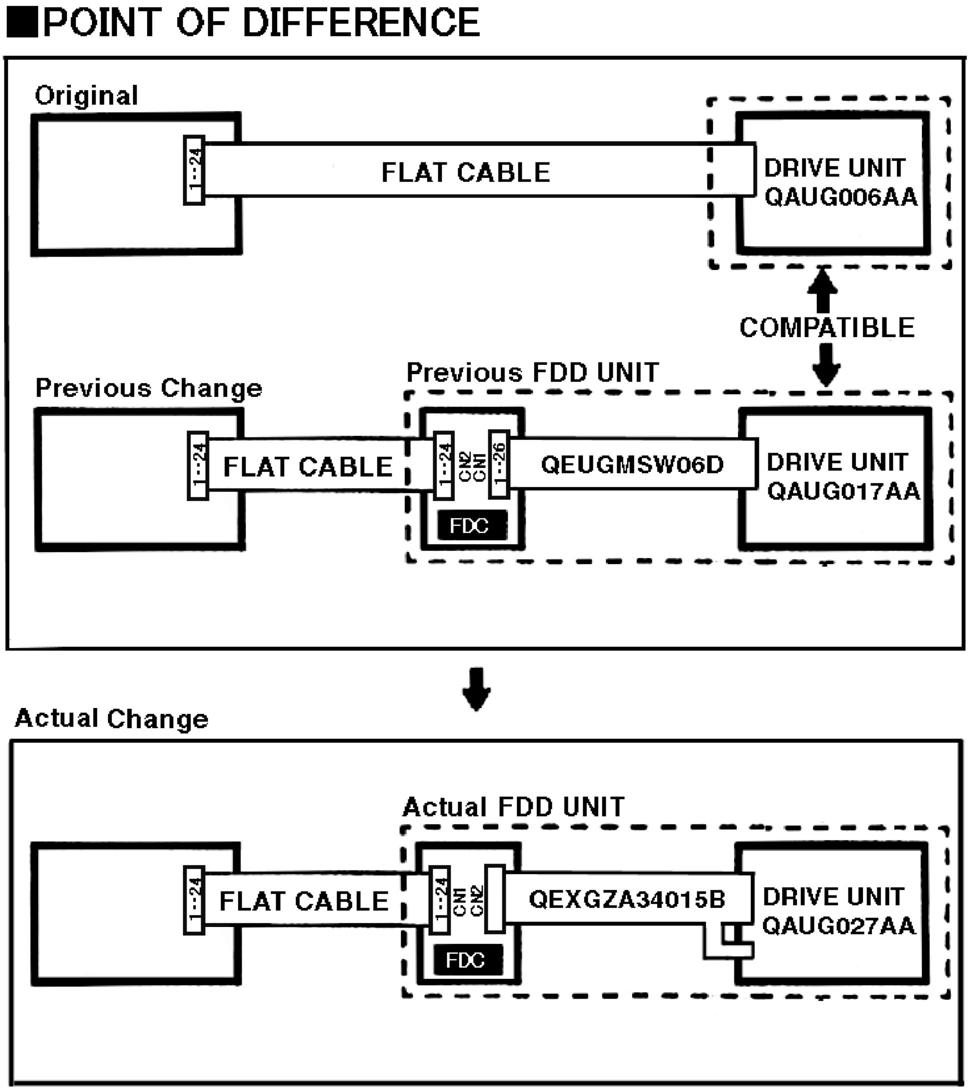

CUSHION
FDC P.C.B.
CONNECTOR WITH WIRE
DISK DRIVE UNIT


MAIN P.C.B. (IC PART LOCATION)
JACK PANEL
IC18
IC16
IC17
IC15
(PROGRAM ROM)

5. Circuit Modifications

In the previous circuit design change, QAUG017AA replaced QAUG006AA in the Drive Unit; but in this circuit design change, QAUG027AA is used. In the previous circuit design change, a convert circuit (FDC) was added for downloading the signal from the pin 26 connector to the pin 24

connector.The addition of a convert circuit assures compatibility with QAUG006AA. QAUG027AA uses the pin 34 and pin 4 connectors. For this reason, for the pin connections, SXPG235611 is used as a convert circuit, and the connection cable has also been changed. Furthermore, IC15 on the MAIN circuit has been upgraded to ensure compatibility with the previous circuit.

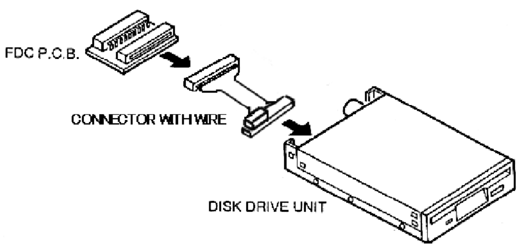

■POINT OF DIFFERENCE
Original
1··24
FLAT CABLE
DRIVE UNIT
QAUG006AA
COMPATIBLE
Previous Change
Previous FDD UNIT
1··24
FLAT CABLE
1··24
CN2
CN1
1··26
QEUGMSW06D
FDC
DRIVE UNIT
QAUG017AA
Actual Change
Actual FDD UNIT
1··24
FLAT CABLE
1··24
CN1
CN2
QEXGZA34015B
FDC
DRIVE UNIT
QAUG027AA

6. Replacement Procedure

If a model incorporating the old drive requires a new FD drive unit, replace the old unit with the new unit as described here below.

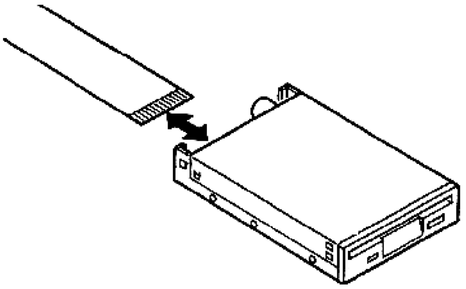
6.1. Assemble the new drive unit

- **Plug the wire into the disk drive unit and the FDC P.C.B. conversion board port.**


FDC P.C.B.
CONNECTOR WITH WIRE
DISK DRIVE UNIT

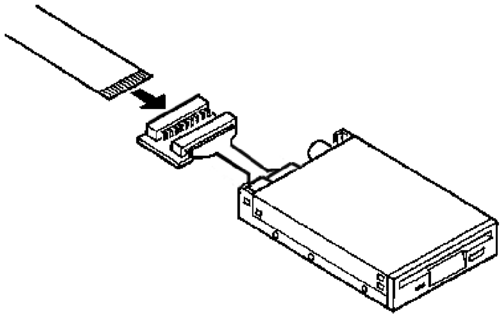
6.2. Remove the old disk drive unit

- Disconnect the flat cable from old disk drive unit (QAUG006AA or CN2 port on the FDC board of QUUG017AA compatible FDD unit) and remove the drive.



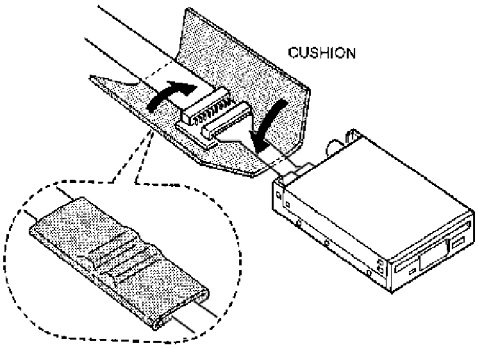
6.3. Install the new drive unit

- Plug the flat cable that was disconnected in step 6.2 into the CN1 port on the FDC board.



6.4. Attach the cushion

- Wrap the FDC board and flat cable with the cushion so that the edge are not seen.



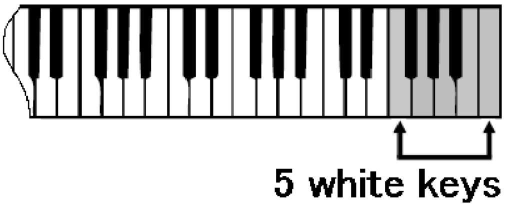
6.5. Replace the program ROM (IC15).

- Remove the old program ROM from MAIN P.C.B. and replace it with the new program ROM. (Refer to "Cabinet Part and Program ROM Location")

6.6. Modify the program for the flash memory.

Use the included PROGRAM PATCH-UP floppy disk to modify the program for the flash memory.

1. Insert the floppy disk with the patch data into the floppy disk drive.
2. While depressing the 5 rightmost white keys on the lower keyboard, turn on the power to the instrument.



3. "Please Wait" is shown on the display, and program modification begins automatically. When the program modification is done, "Program Update Completed!" appears on the display. Turn the power off once and then on again to check that the instrument is operating properly.

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A4

Service Manual

Electronic Organ

SX-GN3/GN3K

(N), (M), (MC), (XM), (EN), (EI), (EH), (EB), (EF), (EZ), (EW), (EP), (EK), (XL), (XR), (XS), (XD), (X)

Photo: SX-GN3K

AREAS

(N):	Japan	(EW):	Switzerland
(M):	U.S.A.	(EP):	Spain
(MC):	Canada	(EK):	the United Kingdom
(XM):	Mexico	(XL):	New Zealand
(EN):	Norway, Sweden, Denmark, Finland	(XR):	Australia
(EI):	Italy	(XS):	Malaysia, Singapore, South Africa
(EH):	Holland	(XD):	Saudi Arabia
(EB):	Belgium	(X):	the Middle East, Indonesia, Hong Kong, the Philippines, Taiwan, Thailand
(EF):	France, Austria		
(EZ):	Germany		

■ Information

1. There are two identical models are available as SX-GN3 and SX-GN3K and all specifications are the same in both models except cabinet parts and panel parts. Identify an unit with model number which available on the name plate on the rear board and perfrom proper service.
2. The pictures and illustrations in this manual are taken from SX-GN3K.

■ Specifications

KEYBOARD		UPPER KEYBOARD: 49 KEYS, LOWER KEYBOARD: 49 KEYS PEDAL KEYBOARD: 13 KEYS, FULL BASS PEDAL (N area only)
PRESET SOUND	ORCHESTRAL CONDUCTOR (UPPER/LOWER)	VOLUME, TAB & ORGAN, POLY, SPECIAL, SOLO
	SOUND SELECT (UPPER/LOWER)	PIANO, ELECTRIC PIANO, HARPSICHORD, MALLET, GUITAR, ELECTRIC GUITAR, STRINGS, VOCAL, BRASS, TRUMPET, SAX, REED, FLUTE, VIOLIN, ACCORDION, EXTEND
	TAB	UPPER: FLUTE 16′, 8′, 5-1/3′, 4′, 2-2/3′, 2′, 1′ PERC 4′, 2-2/3′, LOWER: FLUTE 8′, 4′, 2-2/3′, 2′, 1′
	ORGAN	UPPER: 9 PRESETS, LOWER: 5 PRESETS
	BASS	ORGAN, ORCHESTRA, ACOUSTIC, ELECTRIC, CHOPPER, SYNTH 1, 2, PIPE ORGAN
SOUND EDIT	PARAMETERS	TONE ASSIGN MODE (NORMAL, DUAL, DUET, TRIO), TONE SELECT, VOLUME (LEVEL, KEY BALANCE), PITCH (KEYSHIFT, DETUNE), REPEAT (SPEED), ENVELOPE (ATTACK & DECAY, RELEASE), VIBRATO (DEPTH, SPEED, DELAY), TREMOLO (SPEED), AUTOBEND & TRILL (PATTERN, DEPTH, SPEED), PITCH RELEASE (DEPTH, TIME), GLIDE (ON/OFF), INITIAL TOUCH (VOLUME, AUTOBEND & TRILL), AFTER TOUCH (VOLUME, MODULATION), SUSTAIN (ON/OFF), SOUND NAME
	MEMORY	UPPER 8, LOWER 8, BASS 8

EFFECT	CELESTE	SOUND SELECT, TAB & ORGAN (UPPER & LOWER)
	REVERB	SOUND SELECT, TAB & ORGAN (UPPER & LOWER), DEPTH
	TOUCH	SOUND SELECT (UPPER & LOWER)
	SUSTAIN	SOUND SELECT, TAB & ORGAN (UPPER & LOWER), BASS, LEVEL
	TREMOLO	TAB & ORGAN (UPPER & LOWER), SLOW/FAST
TRANSPOSE		G-C-F♯
TECHNI-CHORD		PROGRAM (CLOSE, OPEN 1, 2)
RHYTHM	PATTERN	MARCH, POLKA, COUNTRY, WALTZ, TANGO, CHA-CHA, RHUMBA, FAST LATIN, BIG BAND, JAZZ COMBO, MODERN JAZZ, DIXIE, JAZZ WALTZ, SHUFFLE, SAMBA, BOSSANOVA, 8 BEAT 1, 2, HARD ROCK, ROCK'N' ROLL, ROCK BALLAD, SAMBA ROCK, SALSA, REGGAE, 16 BEAT 1, 2, 16 BEAT BALLAD, JAZZ ROCK, FUNK, SWING ROCK, DISCO 1, 2, VARIATION
	CONTROL	START/STOP, SYNCHRO & BREAK, FILL IN 1, 2, INTORO & ENDING, TEMPO
	KEYBOARD PERCUSSION	39 KEYS
AUTO PLAY CHORD		FINGERED 1, 2, MEMORY

Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

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Division of Matsushita Electric
Corporation of America
50 Meadowland Parkway,
Secaucus, New Jersey 07094

Panasonic Sales Company,
Division of Matsushita Electric
of Puerto Rico, Inc.
San Gabriel Industrial Park
65th Infantry Ave. Km. 9.5
Carolina, P.R. 00630

ARRANGER		ACCOMP 1, ACCOMP 2 & 3, DRUMS
ONE TOUCH PLAY		○ (ONE TOUCH PLAY, MUSIC STYLE)
VOICE SETTING COMPUTER		SET, 1-8
COMPOSER		5 TRACKS (ACCOMP 1, 2, 3, BASS, DRUMS), MEMORY...8 INPUT MODE (REAL TIME, STEP) EDITING FUNCTIONS (COPY, RECORDING CHORD SELECT)
SEQUENCER	TRACK	8 TRACKS
		PART: UPPER, LOWER, BASS, CHORD, UPPER POLY, LOWER POLY, DRUMS, CONTROL
		STORAGE CAPACITY: APPROX. 6,000 NOTES INPUT MODE: REAL TIME, STEP EDITING FUNCTIONS: PUNCH IN/OUT, TRACK ASSIGN, SONG ALL CLEAR, TRACK CLEAR, TRACK MERGE, MEASURE DELETE, MEASURE ERASE, MEASURE INSERT, MEASURE COPY, VELOCITY CHANGE, QUANTIZE, DEMONSTRATION TUNE
MUSICAL DIRECTOR		LIQUID CRYSTAL DISPLAY: 20 LETTERS×2 LINES, SHIFT/NORMAL BUTTON, CONTRAST
CONTROL		PAGE, TEMPO/PROGRAM DIAL, BALANCE, VOLUME
MIDI		PART (12 PARTS), BASIC CHANNEL (1~16), MIDI INPUT SELECT (CONDUCTOR/DIRECT, APC/DIRECT), MIDI OUTPUT SELECT (KEYBOARD/CONDUCTOR, TECHNI-CHORD ON/OFF, APC/CHORD) MIDI FUNCTION SELECT: <COMMON> INITIAL, NOTE ONLY, TRANSPOSE OUT, PROGRAM CHANGE MODE, SONG SELECT, REAL TIME COMMAND, MIDI CLOCK, MIDI LOAD <PART> OCTAVE SHIFT, PROGRAM CHANGE, VSC PROGRAM CHANGE, SUSTAIN, AFTER TOUCH, PITCH BEND, MODULATION, VOLUME, TREMOLO, EFFECT 1, EFFECT 2, EXPRESSION, INTRO, MIDI APC, DRUMS TYPE, LOCAL CONTROL, MIDI OUT, VSC PROGRAM CHANGE, VSC LOCAL CONTROL
EXTERNAL MEMORY		DIGITAL DISK RECORDER (OPTION)
TERMINALS	MIDI	IN, OUT, THRU
	OTHERS	LINE OUT ...output level 300mV, 600Ω 2CH output (L, R/R+L) AUX IN........input level 150mV, 10KΩ L, R/R+L terminals PHONES.....use headphones with 16Ω impedance
OTHERS		POWER SWITCH, MAIN VOLUME, EXPRESSION PEDAL, FOOT SWITCH, KNEE LEVER
OUTPUT		100W
SPEAKERS		20cm×2, TWEETER×2, 13cm×6cm×2 (MONITOR)
POWER REQUIREMENT		290W, 240VA (CANADA) AC 220V 50Hz/60Hz EUROPE (EXCEPT FOR ENGLAND) AC 120V 60Hz NORTH AMERICA AC 120/220/240V 50Hz/60Hz OTHERS
DIMENSIONS (W×H×D)		GN3: 122.3cm×120cm×60.1cm (48-5/32"×47-1/4"×23-21/32") GN3K: 122.3cm×117.5cm×60.1cm (48-5/32"×46-1/4"×23-21/32")
NET WEIGHT		GN3: 84Kg (185.2lbs) GN3K: 85Kg (187.4lbs)

- Specifications are subject to change without notice for further improvement.

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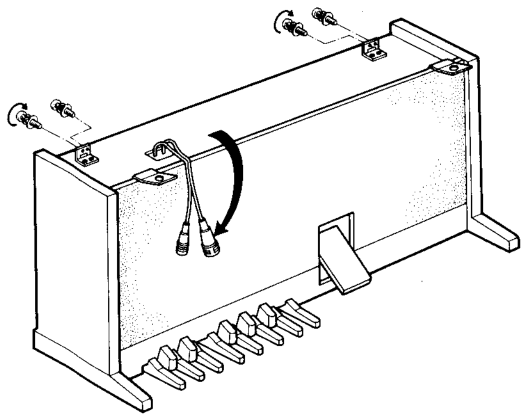
HOW TO ASSEMBLE THE ORGAN

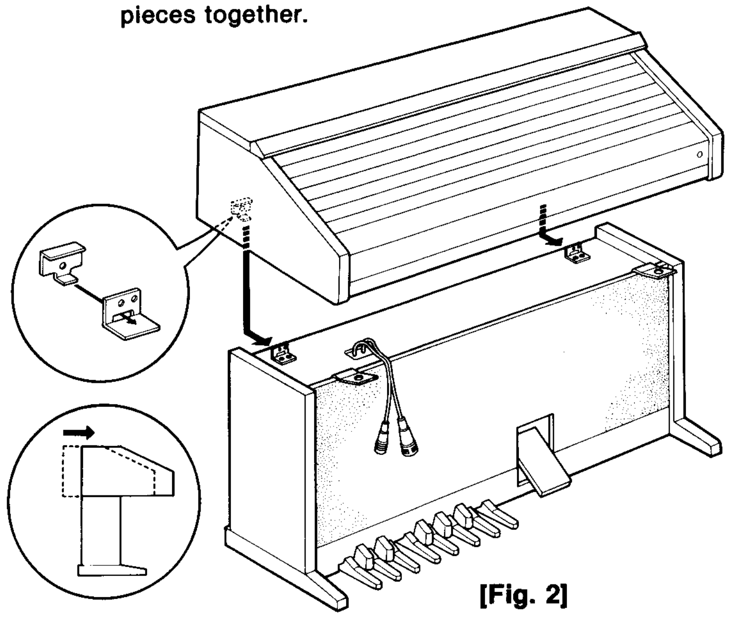
The illustration for following assembly is taken from MODEL SX-GN3. (The SX-GN3K is differ from SX-GN3)

[1] On the lower stand part, remove the four bolts from the metal joints.
Lay the cords to the front of the stand.



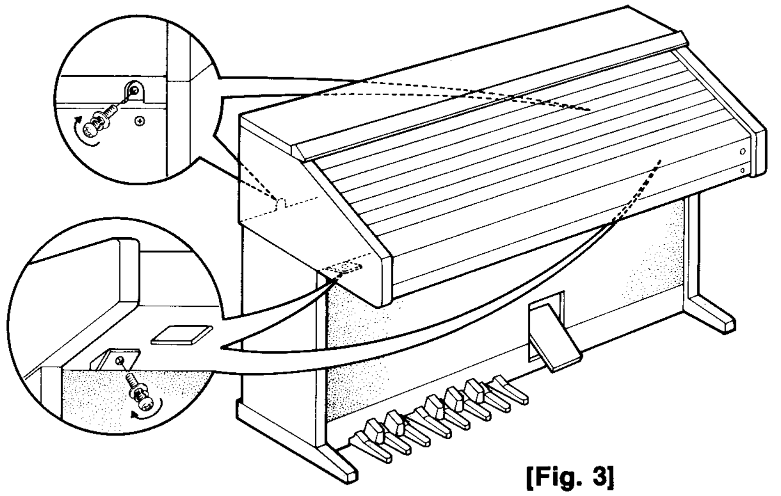
[Fig. 1]

[2] Place the upper organ part on the lower stand part, making sure to fit the metal pieces together.



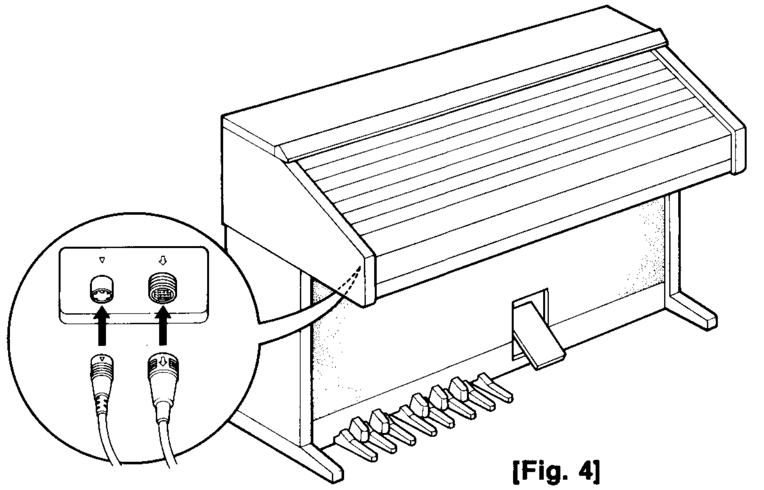
[Fig. 2]

[3] Using the four bolts removed in step 1, secure the upper organ part to the lower organ part as shown in the figure.



[Fig. 3]

[4] Connect the two cords from the lower stand part to the respective terminals on the underside of the upper organ part. Unlock the cover with the accessory key.



[Fig. 4]

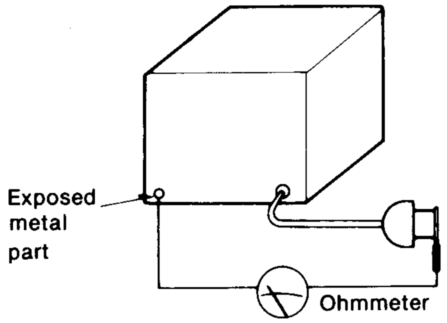
SAFETY PRECAUTION (This "safety precaution" is applied only in U.S.A.)

- **Safety Precaution**

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

- **Insulation Resistance Test**

1. Unpulg the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc.. Mesurements should range from 4MΩ to infinity to all exposed parts.



Resistance=4MΩ to ∞

INITIAL SETTING

[1] Initial setting function will be used to return to the Original Factory setting mode, reset the customer setting and irregular operations with following methodes.

1. Turn the POWER switch to off.
2. Then, Turn on the POWER switch while pressing 16 BEAT 1, 16 BEAT 2, and 16 BEAT BALLAD buttons at the same time.

NOTE:
All stored data in the SEQUENCER, COMPOSER AND OTHER will be initialized with this operation.

[2] Initial setting function also be able to reset limited function of the stored data or all data as same purpose as section [1] above. (ALL, COMPOSER, SOUND MEM, or SEQUENCER is selectable.)

1. Set the MUSICAL DIRECTOR to MEMORY & CONTROL mode.
2. Change the MUSICAL DIRECTOR mode to INITIAL SETTING mode with PAGE button to call 2nd PAGE.

[MEMORY & CONTROL MODE] PAGE 2

```
2 : INITIAL  SETTING
      ALL          [SET]
```

① ② ③ ④

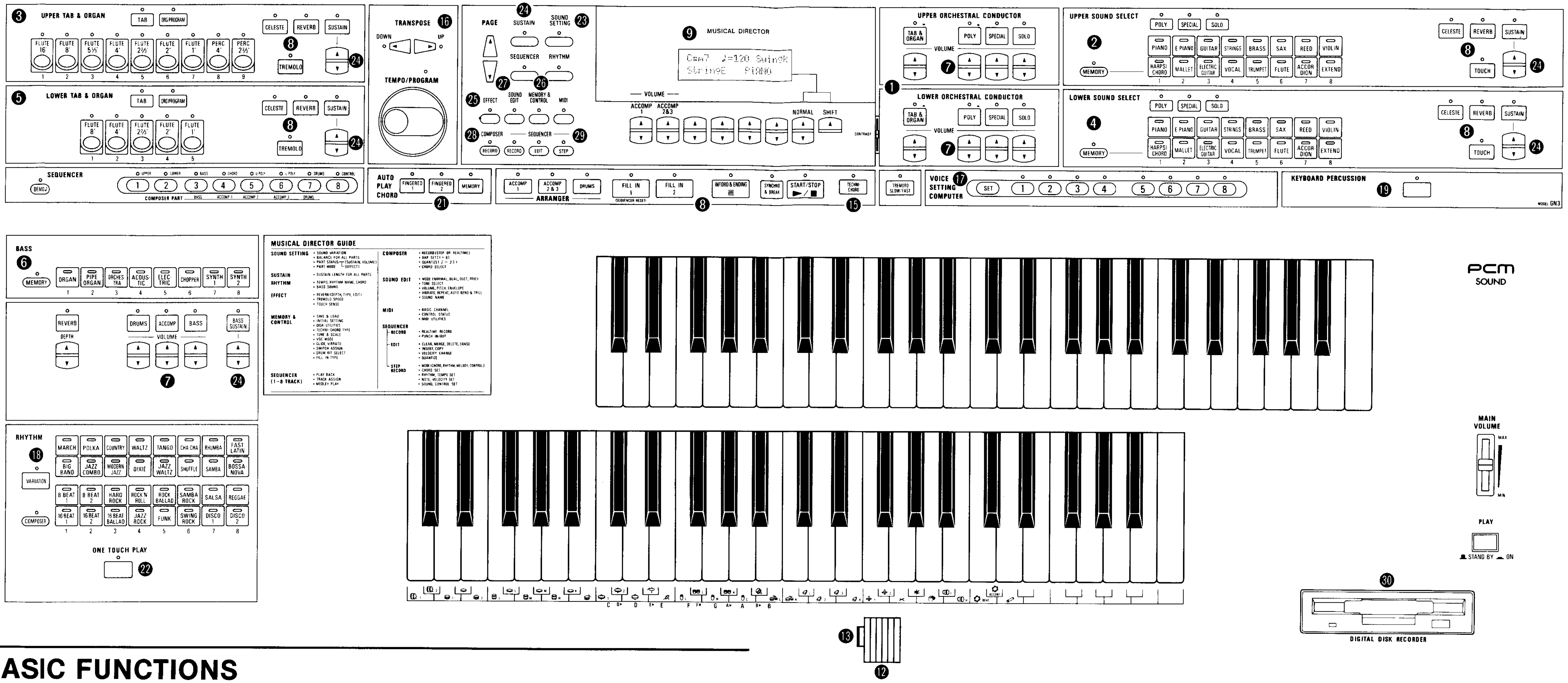
3. The functions to be initialized are selected by the ② buttons.
   ALL:
   Initializes all functions such as the status of sounds and effects, VOICE SETTING COMPUTER, SOUND SELECT storable memories, COMPOSER and SEQUENCER.
   COMPOSER:
   Initializes the **COMPOSER** memories and sets then to the factory presets.
   SOUND MEM.:
   Initializes the **SOUND SELECT** storable memories of all parts and sets them to the factory presets.
   SEQUENCER:
   Initializes the memory contents of all tracks.
4. Press ④ button to change to the following confirmation display.

```
2 : INITIAL  SETTING
   SURE?       [NO] [YES]
```

① ② ③ ④

- Press ④ button for [YES] to execute the initialization procedure.
- Press ③ button for [NO] to cancel the initialization procedure.

ARRANGEMENT OF CONTROL PANEL



UPPER TAB & ORGAN
TAB
ORG PROGRAM
FLUTE 16'
FLUTE 8'
FLUTE 5⅓'
FLUTE 4'
FLUTE 2⅔'
FLUTE 2'
FLUTE 1'
PERC 4'
PERC 2⅔'
CELESTE
REVERB
SUSTAIN
TREMOLO
LOWER TAB & ORGAN
TRANSPOSE
DOWN
UP
TEMPO/PROGRAM
PAGE
SUSTAIN
SOUND SETTING
SEQUENCER
RHYTHM
EFFECT
SOUND EDIT
MEMORY & CONTROL
MIDI
COMPOSER
RECORD
EDIT
STEP
MUSICAL DIRECTOR
C#m7 ♩=120 Swing
Strings PIANO
VOLUME
ACCOMP 1
ACCOMP 2&3
NORMAL
SHIFT
CONTRAST
UPPER ORCHESTRAL CONDUCTOR
TAB & ORGAN
POLY
SPECIAL
SOLO
LOWER ORCHESTRAL CONDUCTOR
UPPER SOUND SELECT
PIANO
E.PIANO
GUITAR
STRINGS
BRASS
SAX
REED
VIOLIN
HARPSI CHORD
MALLET
ELECTRIC GUITAR
VOCAL
TRUMPET
FLUTE
ACCORDION
EXTEND
MEMORY
TOUCH
LOWER SOUND SELECT
DEMO
COMPOSER PART
AUTO PLAY CHORD
FINGERED 1
FINGERED 2
ACCOMP 1
ACCOMP 2&3
DRUMS
FILL IN 1
FILL IN 2
INTRO & ENDING
SYNCHRO & BREAK
START/STOP
TECHNI CHORD
ARRANGER
SEQUENCER RESET
TREMOLO SLOW/FAST
VOICE SETTING COMPUTER
SET
KEYBOARD PERCUSSION
MODEL GN3
BASS
ORGAN
PIPE ORGAN
ORCHESTRA
ACOUSTIC
ELECTRIC
CHOPPER
SYNTH 1
SYNTH 2
DEPTH
BASS SUSTAIN
MUSICAL DIRECTOR GUIDE
RHYTHM
MARCH
POLKA
COUNTRY
WALTZ
TANGO
CHA CHA
RHUMBA
FAST LATIN
BIG BAND
JAZZ COMBO
MODERN JAZZ
DIXIE
JAZZ WALTZ
SHUFFLE
SAMBA
BOSSA NOVA
VARIATION
8 BEAT 1
8 BEAT 2
HARD ROCK
ROCK'N ROLL
ROCK BALLAD
SAMBA ROCK
SALSA
REGGAE
16 BEAT 1
16 BEAT 2
16 BEAT BALLAD
JAZZ ROCK
FUNK
SWING ROCK
DISCO 1
DISCO 2
ONE TOUCH PLAY
PCM SOUND
MAIN VOLUME
MAX
MIN
PLAY
STAND BY
ON
DIGITAL DISK RECORDER
C
C#
D
E♭
E
F
F#
G
A♭
A
B♭
B
①
②
③
④
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⑥
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BASIC FUNCTIONS

❶ ORCHESTRAL CONDUCTOR

These buttons allow you to select groups of sounds, or parts, and their effects instantly. The upper and lower keyboard parts are selected respectively with the **UPPER** and **LOWER ORCHESTRAL CONDUCTOR**. The volume for each part is adjusted with the respective **VOLUME** buttons in this section.

❷ UPPER SOUND SELECT

With this block of buttons, you select the sound for each of three sound groups (parts). First you select a part (**POLY, SPECIAL** or **SOLO**, and then you select one of the many preset sounds for that part. Store a different sound for each part. When a part is selected in the **UPPER ORCHESTRAL CONDUCTOR**, the sound you set for that part is selected for the upper keyboard. **MEMORY** buttons are for storing unique sounds you create yourself with the **SOUND EDIT** feature. The volume of each part is adjusted with the respective **VOLUME** buttons in the **UPPER ORCHESTRAL CONDUCTOR.**

❸ UPPER TAB & ORGAN

TAB sounds are selected for the upper keyboard by turning on the **TAB & ORGAN** button in the **UPPER ORCHESTRAL CONDUCTOR**. Included are the flute and percussive sounds, plus tremolo, sustain, reverb and celeste effects. When the **ORG PROGRAM** button is on, the programmable tab buttons are used to select 9 organ sounds (from 17 factory-preset sounds). The volume is adjusted with the respective **VOLUME** buttons in the **UPPER ORCHESTRAL CONDUCTOR.**

❹ LOWER SOUND SELECT

Sounds are selected for the lower keyboard parts in the same way as for the **UPPER SOUND SELECT** parts. The lower keyboard sounds are used mostly for accompaniment.

❺ LOWER TAB & ORGAN

Select these sounds for the lower keyboard by turning on the **TAB & ORGAN** button in the **LOWER ORCHESTRAL CONDUCTOR**. Like the **UPPER TAB & ORGAN** buttons, the sounds can be combined or selected individually.

❻ BASS

These are the sounds for the pedal keyboard. **MEMORY** buttons are for storing unique sounds you create yourself with the **SOUND EDIT** feature. The **BASS** sound volume is adjusted with the respective buttons in the separate **VOLUME** section.

❼ VOLUME

The volumes for the upper and lower keyboard parts are controlled with the corresponding **VOLUME** buttons in the respective **UPPER** and **LOWER ORCHESTRAL CONDUCTOR**. The **BASS** volume is adjusted with the **BASS** buttons in the separate **VOLUME** section.

❽ Effects

The **CELESTE, TREMOLO, SUSTAIN** and **REVERB** effects are turned on and off for the selected upper and lower keyboard sounds. For the **SOUND SELECT** sound, the **TOUCH** effect is also available.

❾ MUSICAL DIRECTOR

In the normal mode, the **MUSICAL DIRECTOR** indicates the selected sounds, volumes, rhythm, tempo, and all other information about the panel settings. The display is also used for setting the various **SOUND SETTING, SUSTAIN, EFFECT** and **MEMORY & CONTROL** functions. The amazing number and range of settable functions makes the GN series organ truly an instrument which you can fashion to fit exactly your particular playing style and tastes. And finally, the **MUSICAL DIRECTOR** is your key to programming when using the **SOUND EDIT, COMPOSER** and **SEQUENCER** features of your organ. The **CONTRAST** is adjusted with the sliding control.

⓬ Expression pedal

Increase and decrease the loudness of all the organ sound as you play to add expression to the music.

⑬ Glide control
Lower the pitch of the organ by one half-tone or whole tone by pressing the left foot switch. This is used, for example, to get the Hawaiian guitar effect.

⑮ TECHNI-CHORD
Chord notes played on the lower keyboard are added to melody notes played on the upper keyboard. Choose from four harmonic styles.

⑯ TRANSPOSE
C is the standard setting, but you can raise or lower the key of the entire organ with the two buttons. The transposed key is shown on the normal mode display of the **MUSICAL DIRECTOR**. The two buttons are also used to move the cursor on the display when assigning names to your recorded creations or when step-recording/correcting **COMPOSER** and **SEQUENCER** performance data.

⑰ VOICE SETTING COMPUTER
Set up the sounds and effects for the upper, lower and pedal keyboards, and then store them in these 8 buttons for instant recall as you play. You can expand the range of the storable settings to include rhythm selection, tempo setting and more.

⑱ RHYTHM
Select one of the various preset rhythms and start it instantly with the **START/STOP** button. Other features which enhance the **RHYTHM** unit are **SYNCHRO & BREAK**, **INTRO & ENDING**, **FILL IN**, **ARRANGER** and a foot switch. The volume is adjusted with the **DRUMS** buttons in the **VOLUME** section.

⑲ KEYBOARD PERCUSSION
One press of the **KEYBOARD PERCUSSION** button transforms your lower keyboard into a whole band of percussive instruments and special sounds. The keys are picture-coded for quick and easy selection.

㉑ AUTO PLAY CHORD
This feature is activated when the **FINGERED 1** or **FINGERED 2** button is turned on. A full chord and a bass note are automatically produced when you play a key on the lower keyboard. Play major, minor, seventh or minor seven chords and the bass note just by pressing one key. The volume for each part of the **AUTO PLAY CHORD** (**ACCOMP**, **BASS**, **DRUMS**) is adjusted with the respective buttons in the separate **VOLUME** section.

㉒ ONE TOUCH PLAY
With this special feature, you select a rhythm or type of music, and the appropriate sounds and effects are automatically set.

㉓ SOUND SETTING functions
Turning on this button readies the **MUSICAL DIRECTOR** for use as a controller to preset sounds, effects, volume, and mode setting for each part.

㉔ SUSTAIN functions
Turn this button on to set the sustain on/off status and sustain time for each part.

㉕ EFFECT functions
In the effect-setting mode, you use the **MUSICAL DIRECTOR** to set a wide range of functions, including type and depth of **REVERB**, tremolo speed and touch effect.

㉖ MEMORY & CONTROL functions
The settable functions in this mode include memory initialization, **TECHNI-CHORD** harmony style, tuning, scale-effect, **VOICE SETTING COMPUTER** range, glide pitch-change, vibrato depth, switch assign, drum kit contents, fill-in pattern, and more.

㉗ SOUND EDIT
With this feature you select a preset sound, modity it until it sounds just the way you like it, and then store it in one of the memory locations. Edit and store up to 8 sounds for each of the UPPER and LOWER SOUND SELECT sections and up to 8 BASS sounds.

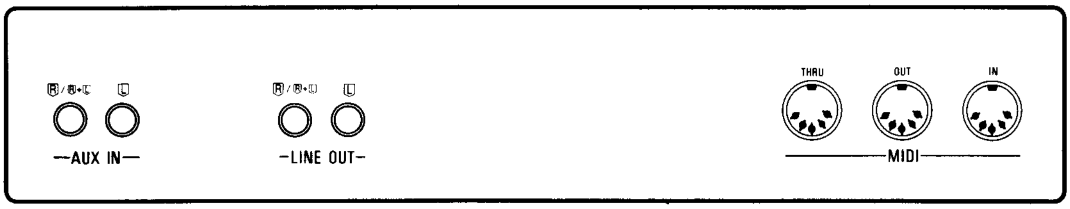
㉘ COMPOSER
Create original rhythm patterns, either in real-time or with the step method, or modify preset rhythms. Store up to 8 new rhythms in the reserved memory locations for instant recall as you play.

㉙ SEQUENCER
With this feature you can separately play and store the parts for an entire tune. Then have the hole ensemble performance played back automatically. This is a true 8-track sequencer, with full real-time recording, step recording and editing features.

㉚ Digital Disk Recorder (option)
The Digital Disk Recorder allows you to store up to 20 performances on a 3.5-in. 2DD memory disk.

TERMINALS

(On the rear panel)



■ **AUX IN** (input level 150mV, 10kΩ)

Use these inputs to connect the audio outputs of other audio equipment, such as a tape deck, VCR, tuner, or an audio mixer, for playback through the organ. This terminal runs through the expression pedal circuit and you can control the volume of the connected instrument with the expression pedal. If connecting a monaural line, connect it to the **R/R+L** terminal.

■ **LINE OUT** (output level 300mV, 600Ω)

Use these outputs to connect the audio output of the organ to other audio equipment, such as a tape deck, VCR, audio mixer, tone cabinets, or additional amplifier/speaker systems.

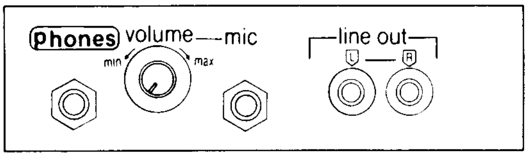
■ **MIDI (Musical Instrument Digital Interface)**

MIDI is standard specification that enables connection to equipment such as synthesizers and personal computers. Data transmission and reception are possible between the Technics organ and equipment provided with MIDI terminals.

IN:	The terminal that receives data from external equipment.
OUT:	The terminal that transmits data from the organ to external equipment.
THRU:	The terminal that transfers data from the **IN** terminal directly to other equipment.

- Use a 5-pin DIN cord (less than 15m long) for these connections.

(Below the lower keyboard)



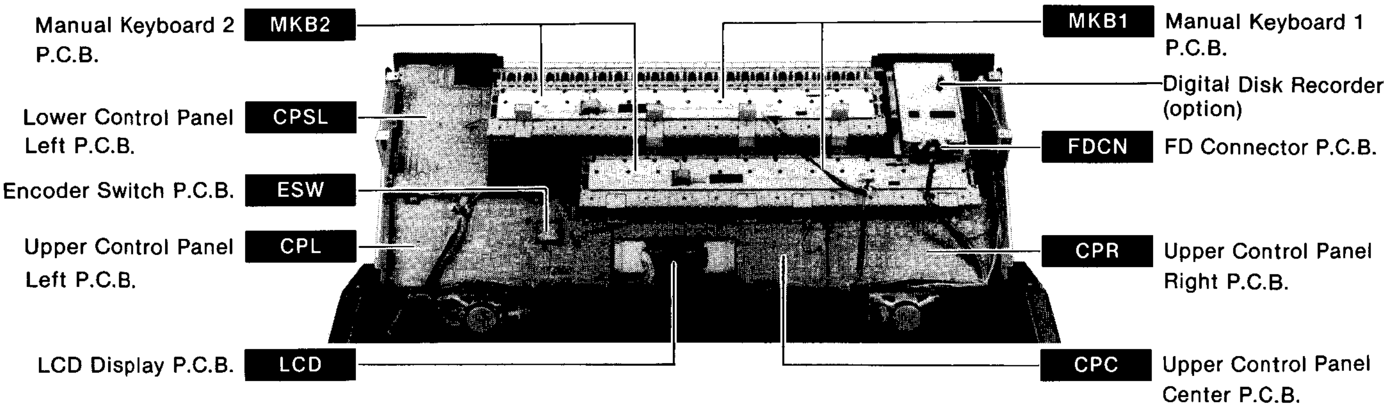
PHONES (Use headphones with 16 ohm impedance.)
For silent practice headphones may be used. When plugged in, the organ's speaker system is automatically switched off, and the entire organ is heard only through the headphones.

MIC (input level 7.5mV, 10kΩ)
The organ will accept a microphone of the uni-directional type. This type of microphone reduces feedback to the minimum.

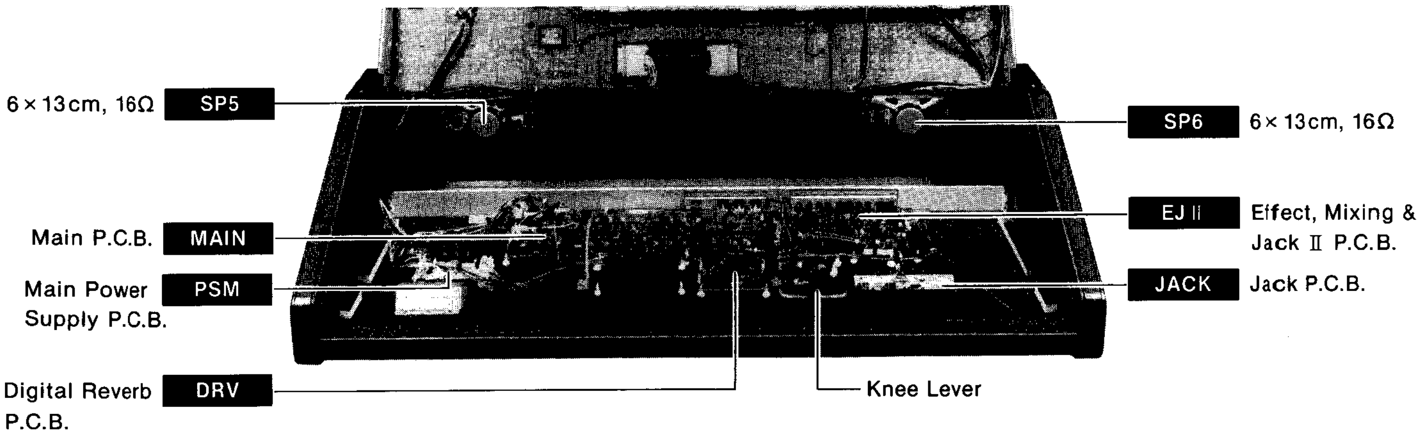
MIC VOLUME balances instrumental or vocal sounds fed into the microphone with the loudness of the organ.

LINE OUT (output level 300mV, 600Ω)
Phono jacks are provided for 2-channel (L/R) output. Use these outputs to connect the audio output of the organ to other audio equipment, such as a tape deck, VCR, audio mixer, tone cabinets, or additional amplifier/speaker systems.

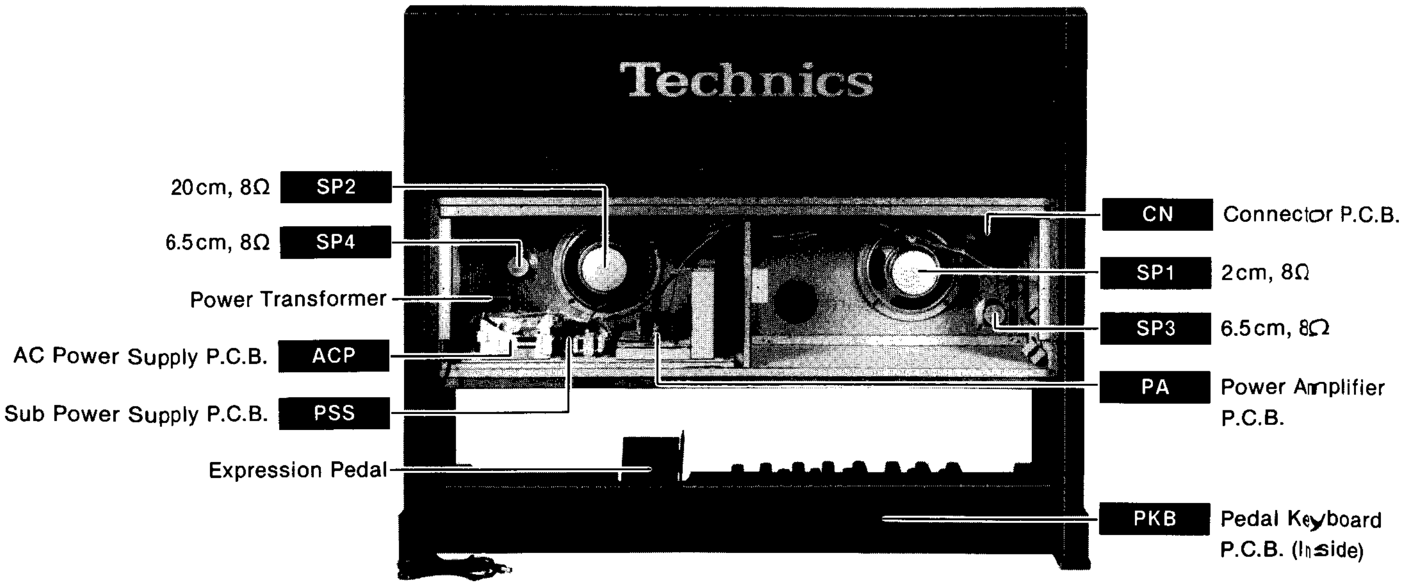
PARTS LOCATION


Manual Keyboard 2 P.C.B.
MKB2
Lower Control Panel Left P.C.B.
CPSL
Encoder Switch P.C.B.
ESW
Upper Control Panel Left P.C.B.
CPL
LCD Display P.C.B.
LCD
MKB1
Manual Keyboard 1 P.C.B.
Digital Disk Recorder (option)
FDCN
FD Connector P.C.B.
CPR
Upper Control Panel Right P.C.B.
CPC
Upper Control Panel Center P.C.B.

[Photo-1]


6 × 13cm, 16Ω
SP5
Main P.C.B.
MAIN
Main Power Supply P.C.B.
PSM
Digital Reverb P.C.B.
DRV
SP6
6 × 13cm, 16Ω
EJ II
Effect, Mixing & Jack II P.C.B.
JACK
Jack P.C.B.
Knee Lever

[Photo-2]

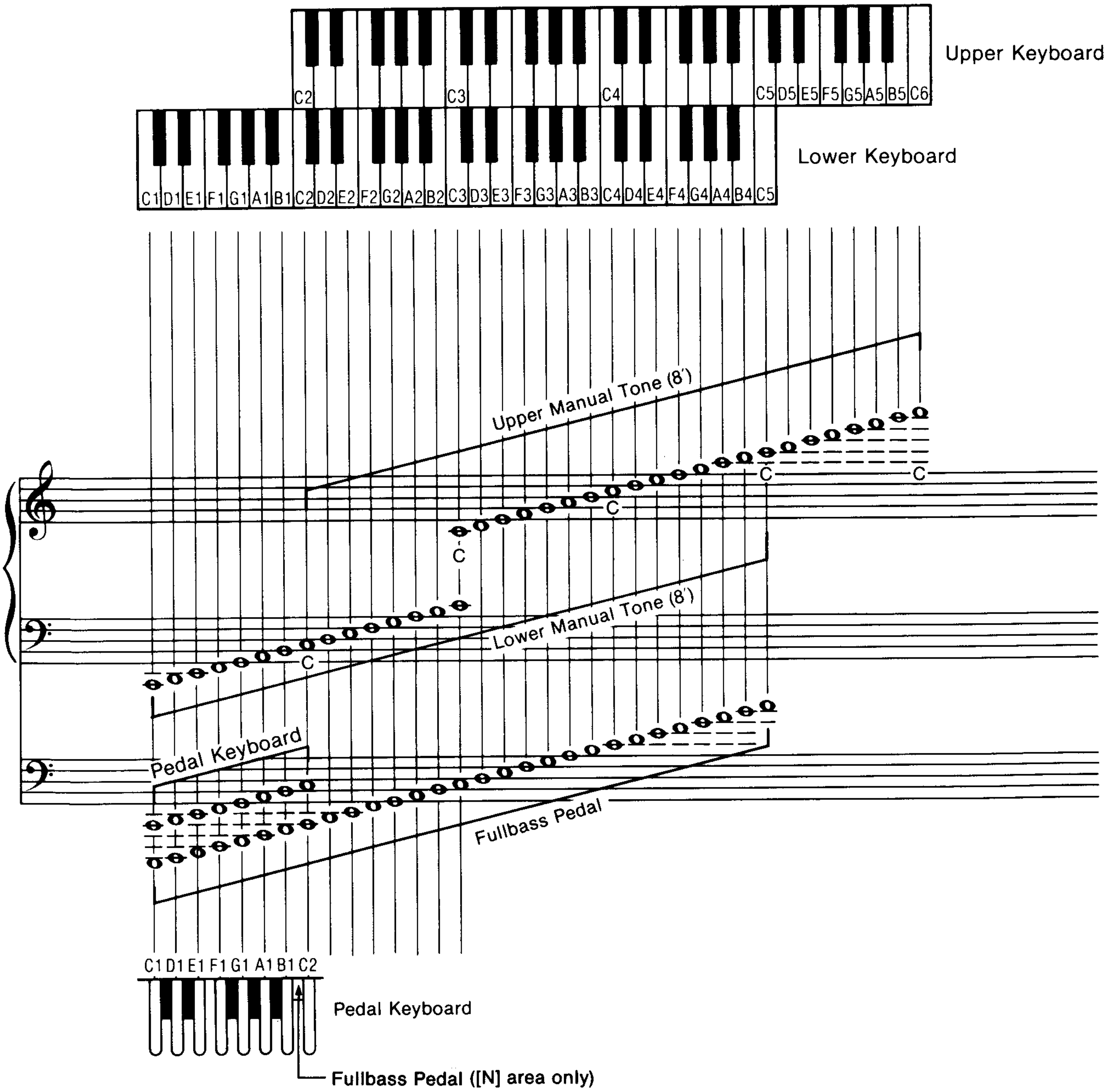

Technics
20cm, 8Ω
SP2
6.5cm, 8Ω
SP4
Power Transformer
AC Power Supply P.C.B.
ACP
Sub Power Supply P.C.B.
PSS
Expression Pedal
CN
Connector P.C.B.
SP1
2cm, 8Ω
SP3
6.5cm, 8Ω
PA
Power Amplifier P.C.B.
PKB
Pedal Keyboard P.C.B. (Inside)

[Photo-3]

KEYBOARD RANGES

Upper Keyboard ....49 Keys (4 Octaves)
Lower Keyboard ....49 Keys (4 Octaves)
Pedal Keyboard ....13 Keys (1 Octave)+Fullbass Pedal ([N] area only)

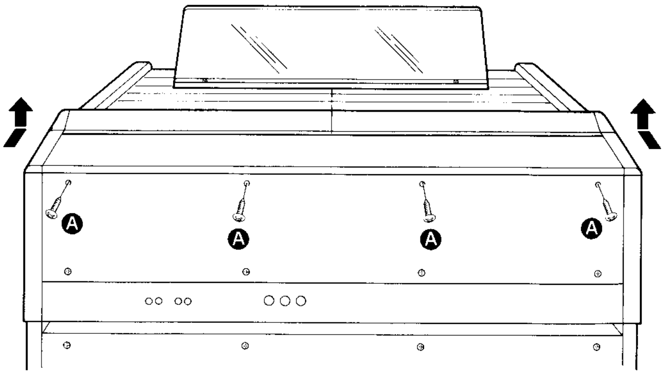
*An 8-foot compass is used for each keyboard.


Upper Keyboard
C2
C3
C4
C5 D5 E5 F5 G5 A5 B5 C6
Lower Keyboard
C1 D1 E1 F1 G1 A1 B1 C2 D2 E2 F2 G2 A2 B2 C3 D3 E3 F3 G3 A3 B3 C4 D4 E4 F4 G4 A4 B4 C5
Upper Manual Tone (8')
Lower Manual Tone (8')
Pedal Keyboard
Fullbass Pedal
C
C1 D1 E1 F1 G1 A1 B1 C2
Pedal Keyboard
Fullbass Pedal ([N] area only)

DISASSEMBLY INSTRUCTIONS

[1] Top Cover

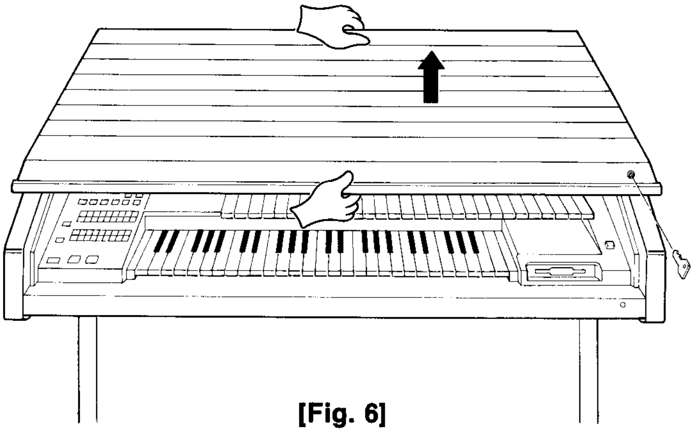
1. Remove the top cover holding screws located on the rear board. (Ⓐ 4 pcs.)
2. Remove the top cover, sliding it forward and lift.



[Fig. 5]

[2] Sliding Cover

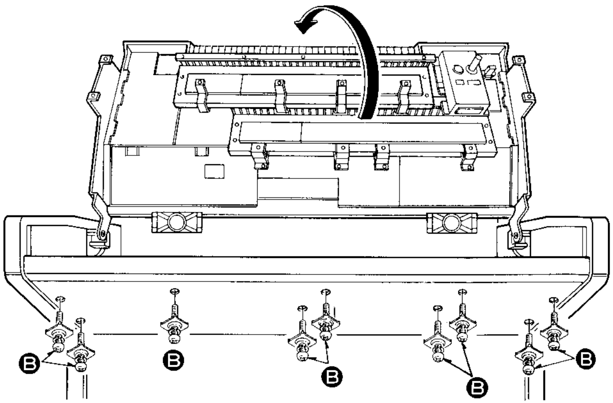
1. Remove the top cover. (See step [1].)
2. Unlock the sliding cover with the accessory key.
3. Remove the sliding cover in its fully closed position.



[Fig. 6]

[3] Control Panel with Keyboard Unit

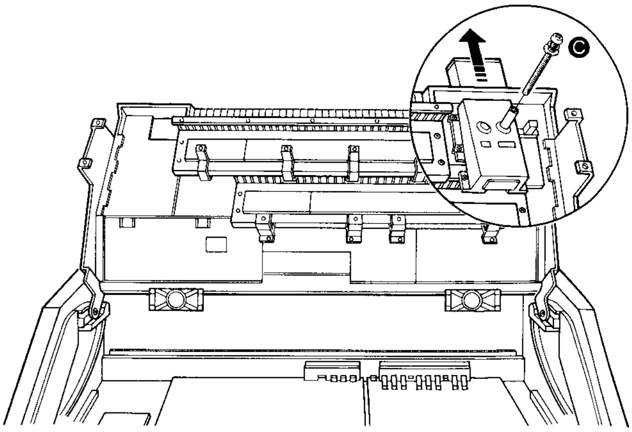
1. Remove both top cover and sliding cover. (See steps [1] and [2].)
2. Remove the control panel holding screws located under the upper cabinet. (Ⓑ 9 pcs.)
3. The control panel with keyboard unit can now opened upwards.



[Fig. 7]

[4] Digital Disk Recorder: DDR (option)

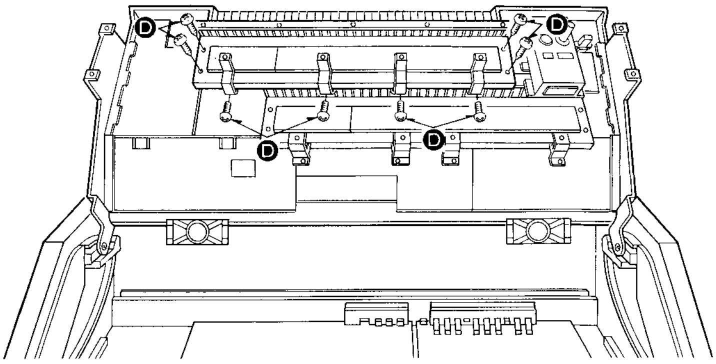
1. Open the control panel with keyboard unit. (See step [3].)
2. Remove the DDR holding screw. (Ⓒ 1 pcs.)
3. Pushing the DDR from the window of the chassis.
4. Then the DDR can be removed.



[Fig. 8]

5 Lower Keyboard Ass'y

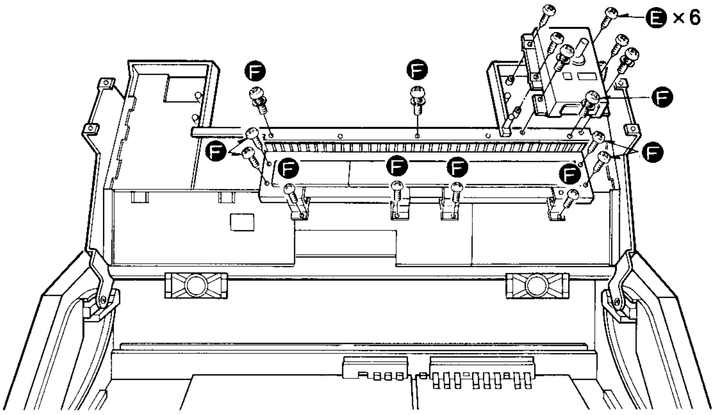
1. Open the control panel with keyboard unit. (See step 3.)
2. Remove the connectors from the keyboard P.C.B.
3. Remove the lower. keyboard ass'y holding screws. (Ⓓ 8 pcs.)
4. The lower keyboard ass'y can be removed.



[Fig. 9]

6 Upper Keyboard Ass'y

1. Open the control panel with keyboard unit. (See step 3.)
2. Remove the digital disk recorder and lower keyboard ass'y. (See step 4 and 5.)
3. Remove the connectors from the keyboard P.C.B. and FD connector P.C.B.
4. Remove the digital disk recorder mounting chassis. (Ⓔ 6 pcs.)
5. Remove the upper keyboard ass'y holding screws. (Ⓕ 11 pcs.)
6. The upper keyboard ass'y can be removed.



[Fig. 10]

7 Key (s)

Disassembly:

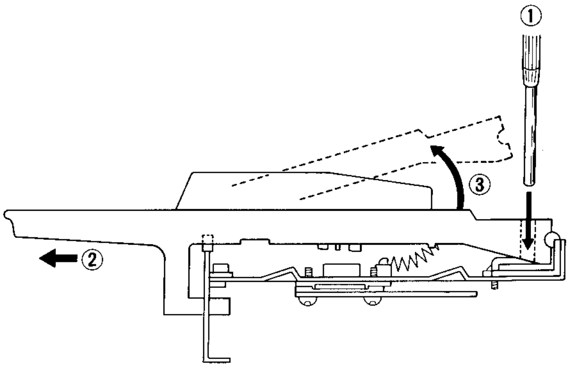
1. Remove the keyboard ass'y from the cabinet. (See steps 5 & 6.)
2. Use 1/8 inch Phillips screw driver and insert it to the hole at end of the key for release the key as shown in Fig. 11.
3. Pull the key to the toward.

Note:

If a black key is to be replaced it is necessary to remove both adjacent white keys fast.

Assembly:

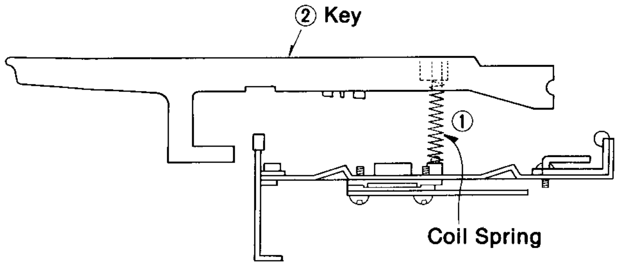
1. Place the coil spring on to the chassis as shown Fig. 12.
2. Place the key into position as shown Fig. 12.
3. The front part of the key suppose to place into the position first, then place the end of the key in to the position as shown Fig. 13.



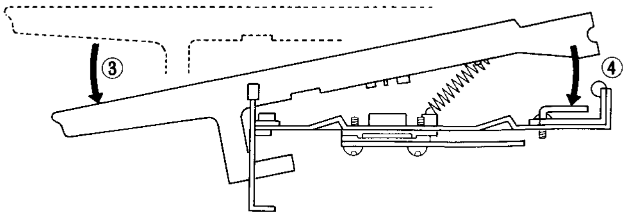
[Fig. 11]

Note:

If the black key and white key are removed, start to mount the black key first.



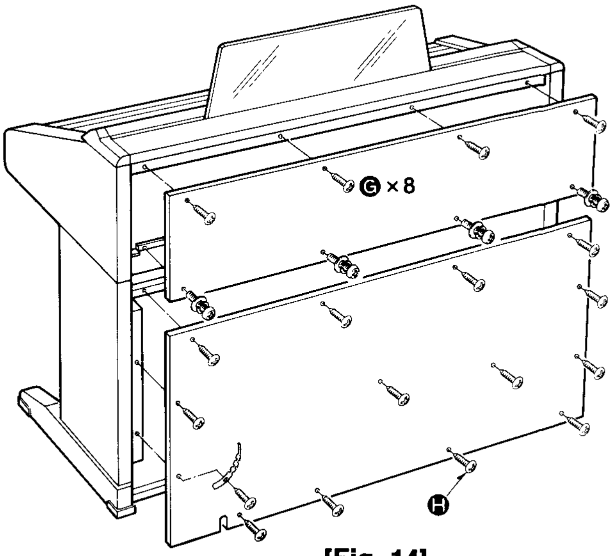
[Fig. 12]



[Fig. 13]

8 Rear Board

1. Upper rear board
   Remove the upper rear board holding screws.
   (🅖 8 pcs.)
2. Lower rear board
   Remove the lower rear board holding screws.
   (SX-GN3: 🅗 14pcs.), (SX-GN3K: 🅗 15pcs.)



[Fig. 14]

9 Expression Pedal Ass'y

<SX-GN3>

1. Remove the lower rear board of the cabinet. (See step 8.)
2. Remove the expression pedal mounting screws. (Fig. 15 🅘 4pcs.)
3. The expression pedal can be removed.

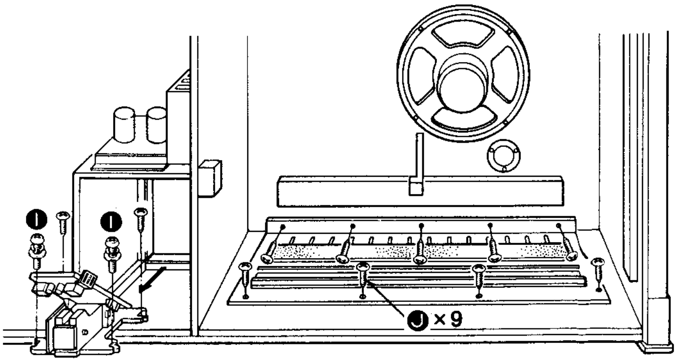
<SX-GN3K>

1. Remove the expression pedal unit holding screws. (Fig. 16 🅚 4pcs.)

10 Pedal Keyboard Ass'y

<SX-GN3>

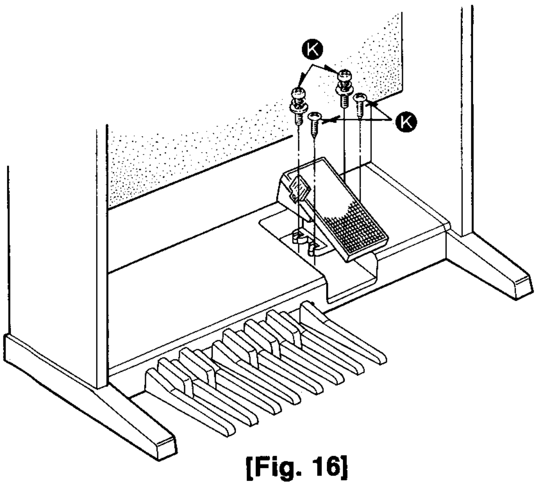
1. Remove the lower rear board of the cabinet. (See step 8.)
2. Remove the pedal keyboard holding screws. (Fig. 15 🅙 9pcs.)
3. Tilt the entire unit a little to toward to the rear very carefully for easier to take the pedal keyboard out from the bottom wood board.



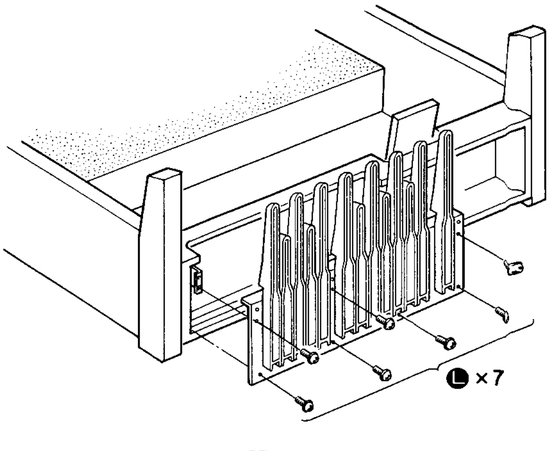
[Fig. 15]

<SX-GN3K>

1. Remove the pedal keyboard holding screws. (Fig. 17 🅛 7pcs.)



[Fig. 16]



[Fig. 17]

MEASUREMENTS AND ADJUSTMENTS

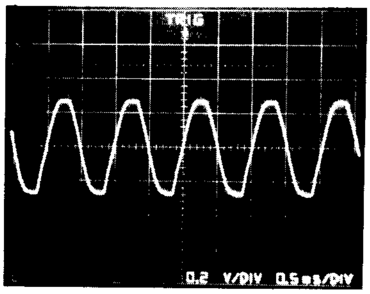
Measuring Equipment

- Oscilloscope 20MHz, 10: 1 probe
- Capacitor, 50V 1μF (ECEA1HN010S)
- Oscillator, 1kHz sine wave, 0~10Vp-p, 600Ω

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT P.C.B.	ADJ. POINT	CONNECT METER TO	METER READING
BBD Bias (TREMOLO)	any position	Oscilloscope and oscillator	**EJ II** P.C.B.	VR1	IC15-⑦ pin	Photo-A
	1. Connect the oscilloscope to IC15-⑦ pin of **EJ II** circuit board. 2. Input 1kHz sine wave to IC14-③ pin by oscillator through capacitor of less than 50V 1μF. Then, adjust the output level of oscillator until the sinewave on the oscilloscope is clipped. 3. Adjust VR1 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.					
BBD Bias (CELESTE)	any position	Oscilloscope and oscillator	**EJ II** P.C.B.	VR2	IC33-① pin	Photo-A
	1. Connect the oscilloscope to IC33-① pin of **EJ II** circuit board. 2. Input 1kHz sine wave to IC31-③ pin by oscillator through capacitor of less than 50V 1μF. Then, adjust the output level of oscillator until the sinewave on the oscilloscope is clipped. 3. Adjust VR2 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.					

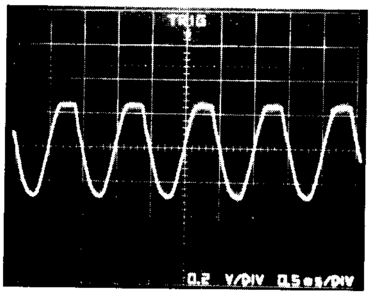
BBD bias adjustment

○: Good

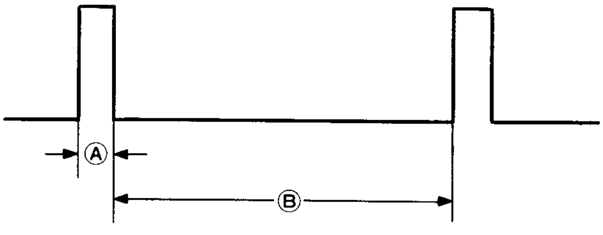


[Photo-A]

×: Fault



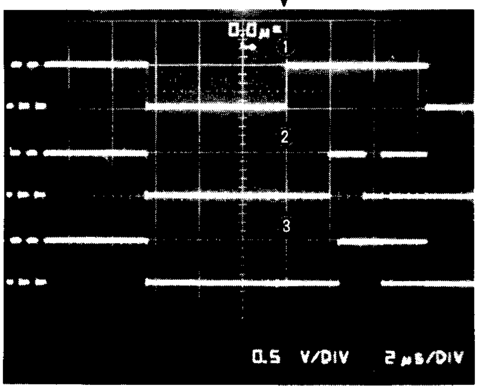
[Photo-B]

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT P.C.B.	ADJ. POINT	CONNECT METER TO	METER READING
EXP. Control pulse width	Main volume..................max. Expression pedal..........max. any key............................on	Oscilloscope	**EJ II** P.C.B.	VR3	IC51-⑫ pin	Fig. A
	1. Connect the oscilloscope to IC51-⑫ pin of **EJ II** circuit board. 2. Adjust the VR3 so that the pulse width Ⓐ and Ⓑ ratio, as shown in Fig. A.					
	 Ⓐ:Ⓑ=1: 9 **[Fig. A]**					

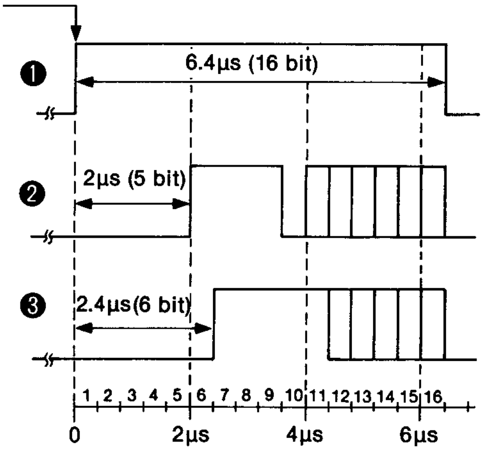
ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT P.C.B.	ADJ. POINT	CONNECT METER TO	METER READING
DRV bias	any position	Oscilloscope	DRV P.C.B.	VR1	Check Point ⓬, ⓭	Photo-C Fig. B

1. Connect the oscilloscope channel 1 to DRV circuit check point ⓬ and connect the oscilloscope external trigger in to DRV check point ⓭.
   (oscilloscope Diviation setting must be=0.5V/DIV, 2µs/DIV)
2. Turn the adjustment VR1 to full clockwise.
3. Turn the VR1 counter-clockwise gradually to find the data starting point turns to HIGH (refer photo C-❶, & Fig. B-❶) and adjust the strating point to the oscilloscope diviation line for easy counting for next procedure.
4. Confirm the first 5 bits (2.0µs) are low when turn the VR1 to full counter-clockwise. (refer photo C-❷, Fig. B-❷)
5. Turn the VR1 clockwise gradually and make first 6 bits (2.4µs) turn to low. (refer photo C-❸, Fig. B-❸)

Data starting point



[Photo-C]

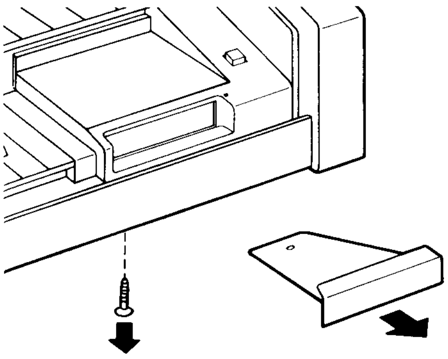


[Fig. B]

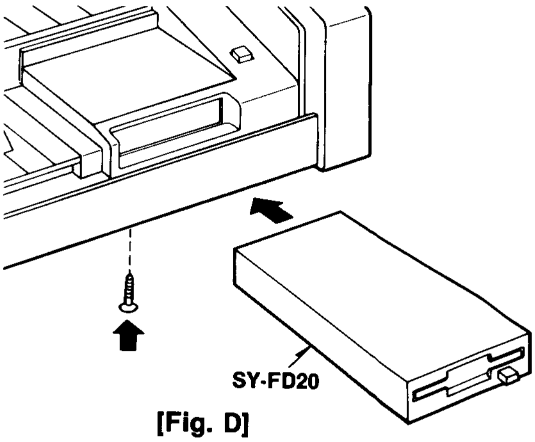
HOW TO INSTALL THE DIGITAL DISK RECODER

■ The SY-FD20 Digital Disk Recoder is an option.
When using the optional Digital Disk Recoder (SY-FD20), installing in the Technics organ as instructed below.

1. Make sure that the Technics organ is turned off.
2. Remove the screw from under the right side of the keyboard. The cover can now be removed from the Digital Disk Recorder compartment.
3. Insert the Digital Disk Recorder into the compartment opening and push it in firmly as far as it will go. Secure the Digital Disk Recorder with the screw that you removed in step **2**.



[Fig. C]



[Fig. D]

PRECAUTIONS BEFORE SERVICING

■ Precautions for measuring of the output waveforms.

1. Set to the INITIAL mode before measurement. (Refer to page I-3.)
2. After INITIAL mode, set the measurement conditions as each check points.
3. The waveform was measured by "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may somewhat change due to variation of timing of triggering.
4. Since the 1/10 of the test probe is used, the indicated voltage value on bottom part of the each waveform photo is 1/10 of the actual value. (e.g. 0.2V/cm should be 2.0V/cm)

■ Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

■ Symbolic Marks

The symbolic marks for resistors and capacitors which used in this circuits are classified as following TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagrams.

(TABLE-1)

SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD—F—type)	Ⓕ	Fixed Metal Film Resistors "FLAME-PROOF" (ERX—type)
Ⓕ	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF—type)	🄵	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ—type)
Ⓕ	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG—type)	🄵	Fuse Type Fixed Carbon Film Resistors "FLAME-PROOF" (ERD2FC—type)
Ⓖ	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)		

2. CAPACITORS
   - Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10% Tolerance)
   - Polarized capacitors without symbolic mark are Aluminum Electrolytic Capacitors. (ECEA—type, ±20% Tolerance)

(TABLE-2)

SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarised Electrolytic Capacitors	ECEA−KN−type
Ⓨ	Non-Polarised Electrolytic Capacitors (for Network System)	ECEA−Y−type
(MS)	Aluminum Electrolytic Capacitors (Low leakage current type)	ECEA−M−type
Ⓩ	Aluminum Electrolytic Capacitors (Low impeadance type)	ECEA−Z−type
(TF)	Metalized Plastic Film Capacitors (TF Series)	ECQV−type
	Polyester Film Capacitors	ECQB−type
○	Temprature Compensating Ceramic Capacitors	ECC−type
	High-Dielectric Constant Ceramic Capacitors	ECK−type ECR−type
	Metalized Polyester Film Capacitors for Across the Line	ECQ−EW−type
	Aluminum Electrolytic Capacitors for smooting Circuit	ECES−type
Ⓣ	Tantalum Solid Electrolytic Capacitors	ECS−type

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

The following changes in performance may occur in the Technics organ but do not indicate trouble:

Phenomenon	Remedy

■ SOUNDS and EFFECTS

The buttons, keys, etc. malfunction.	•Turn off the **PLAY** button once, then turn it on again. •If the above procedure is not successful, turn off the **PLAY** button once. Then, while pressing **16 BEAT 1**, **16 BEAT 2** and **16 BEAT BALLAD** in the **RHYTHM** section at the same time, turn the **PLAY** button on again. (Note that, in this case, the stored contents of the **SEQUENCER**, **COMPOSER**, etc. are erased.)
When a key is pressed, it does not sound.	The buttons and keys do not function when the **DEMO** ♪ button is on. Press the **DEMO** ♪ button to turn it off.
The sound of a part cannot be heard.	•The corresponding volume is set to off in the **ORCHESTRAL CONDUCTOR**. Use the ⊟ buttons below the display to adjust the volume for that part to an appropriate level. •The LOCAL CONTROL for the part is set to OFF. Set the LOCAL CONTROL to ON.
When the **TAB & ORGAN** is selected in the **ORCHESTRAL CONDUCTOR**, it does not sound.	If all the **FLUTE** and **PERC** buttons are off while the **TAB & ORGAN** button is on, it does not sound. Turn on the **FLUTE** or **PERC** button to select the sound.
When many keys are pressed at the same time, some sounds cannot be heard.	•The DUAL mode is selected. •MONO or SOLO mode is selected with the PART ASSIGN function.
The sound of the lower keyboard or pedal keyboard does not stop.	This occurs if the lower keyboard is played when the **FINGERED 1** or **2** and the **MEMORY** buttons are on. Turn off the **MEMORY** button.
The knee lever, foot switch(es) and full bass pedal do not operate properly. For example, the knee lever does not turn the **SUSTAIN** function on and off.	Any functional on and off operation other than the factory presets are storable in these switches. For example, the knee lever can turn the **TECHNI-CHORD** on and off. Store your favorite functions to turn them on and off.

■ RHYTHM

The rhythm does not start.	•The **DRUMS** button in the **VOLUME** section is turned off. •A **COMPOSER** number button in which no data is stored has been selected. •When a **SEQUENCER** track button(s) is on, the rhythm will not start unless the rhythm part has been stored. •When the clock mode is set to MIDI, the rhythm does not start if no MIDI clock signal is received from another instrument. When using only the organ, return the clock mode to the internal clock, for example by turning off the **PLAY** button once.

■ AUTO PLAY CHORD

The **ACCOMP 1**, **2** or **3** part does not sound when the automatic accompaniment is used.	•When both the **ACCOMP 1** and **2&3** buttons of the **ARRANGER** are off, the **ACCOMP** part of the **AUTO PLAY CHORD** or **COMPOSER** function does not sound. Turn on the desired **ACCOMP 1** or **2&3** button. •When the lower keyboard is played with the **KEYBOARD PERCUSSION**, **ACCOMP** and **BASS** automatic accompaniment patterns do not sound. Play the chord on the lower keyboard after pressing the **KEYBOARD PERCUSSION** button to turn it off.

Phenomenon	Remedy

■ SOUND EDIT

When a chord is played on the keyboard, each key sounds different.	DUET or TRIO mode sound is composed of multiple tones. When a chord is played, different tones are assigned to each key.

■ COMPOSER

Storage is not possible.	•The remaining storage capacity of the **COMPOSER** memory is 0. Erase any **COMPOSER** memory number in which a pattern is stored. Save it in a memory disk (SY-D20), if necessary. •In the real-time recording mode, press the **START/STOP** button when the display is **PAGE 3**, and recording will start.
The setting of the time signature or the number of measures is not possible.	The time signature or the number of measures cannot be changed when a pattern is stored in the **COMPOSER**. Erase the stored pattern.
The stored rhythm pattern plays back at intervals.	This occurs when the number of stored measures is less than the specified number. Store a pattern of the same number of measures which is specified on the **PAGE 2** display.
The timing of a rhythm pattern which was stored in the real-time mode is not correct.	The smallest note unit that can be stored is defined by setting the QUANTIZE level. When the timing of a played note is off for the QUANTIZE level, it will be corrected to the nearest note unit and stored.

■ SEQUENCER

Storage is not possible.	•The indicator for the track to be used is not flashing. •The remaining storage capacity of the **SEQUENCER** memory is 0. Erase other memory contents with the TRACK CLEAR or SONG CLEAR function. (If desired, first save them in a memory disk [SY-D20].)
Multi-track recording does not work.	When the indicator for the playback track is lit, press the **START/STOP** button to start recording.
The displayed measure number during recording or playback does not coincide with the performance.	The number of measures corresponds to the time signature of the rhythm which was selected at the beginning of recording or playback. If the time signature is modified by changing the rhythm, store the rhythm change data in the **RHYTHM** track.
The automatic rhythm does not start when playback has been started during the performance.	When automatic playback is begun at a point after the stored rhythm start, the rhythm will not start.

■ DIGITAL DISK RECORDER (option)

The Digital Disk Recorder produces a noise during storage or automatic performance.	This occurs when the Digital Disk Recorder searches for a storage location. It does not indicate a problem.
When the operation to load from the memory disk is performed, the contents of the organ's internal memory are erased.	When performing the load operation from a memory disk, the organ's internal memory changes to that stored in the memory disk. To preserve a song in the organ's memory, save it in a memory disk before performing the load procedure.

ERROR DISPLAY

Display	Cause

■ COMPOSER/SEQUENCER

Display	Cause
MEMORY full!!	• The **COMPOSER** or **SEQUENCER** memory is full.
MEASURE error!!	• A measure number which does not exist was specified. • The measure number was specified improperly.
REPEAT exists	• You attempted to use the copy, insert or delete procedure for a **SEQUENCER** chord track or rhythm track in which a repeat mark is stored.
PART error!!	• Illegal edit attempt, such as in a melody track or rhythm track.
DATA exists	• You attempted to use the **COMPOSER** function to modify a beat or measure of memory where a pattern was stored.
TRACK error!!	• You attempted to edit a **SEQUENCER** track in which no song or data is stored.
OPERATION error!!	• Recording is ending with no punch out point specified (the punch in point was specified).

■ MEMORY DISK

Display	Cause
LOAD error!!	• Loading failed.
SAVE error!!	• Saving failed.
DELETE error!!	• Deleting a song failed.
VERIFY error!!	• Data verification failed. • Loaded, saved, or copied data has errors.
FORMAT error!!	• Formatting failed.
NO DISK	• A memory disk is not inserted.
PROTECT error!!	• You attempted to save to a memory disk which is write protected.
SONG NOT FOUND	• You attempted to load a song which does not exist in the memory disk.
DISK FULL!!	• Available memory area on the memory disk is full. Erase some stored tunes on the memory disk or use a new memory disk.

MIDI INPLEMENTATION CHART

Organ

[SX-GN3(K)/SX-GN5(K)/SX-GN7(K)/SX-GN9(K)] **(Transmitted)**

Function		UPPER POLY	UPPER SPECIAL SOLO (GN3/GN5)/ EXTRA (GN7/GN9)	LOWER POLY	LOWER SPECIAL SOLO (GN3/GN5)/ EXTRA (GN7/GN9)	ACCOMP 1~3	BASS	DRUMS	CONTROL	Remarks
Basic Channel	Default	1~16	1~16	1~16	1~16	1~16	1~16	1~16	1~16	memorized
	Changed	1~16	1~16	1~16	1~16	1~16	1~16	1~16	1~16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	—	—	—	—	—	—	—	—	
Note Number		0~127	0~127	0~127	0~127	0~127	0~127	0~127	—	Changes depending on the position of the Octave Shift or Transpose control.
	True voice	—	—	—	—	—	—	—	—	
Velocity	Note ON	○	○	○	○	○	○	○	—	
	Note OFF	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	—	
After Touch	Key's	×	×	×	×	×	×	×	×	
	Ch's	× *○ × (GN9)	× *○ × (GN9)	× *○ × (GN9)	× *○ × (GN9)	×	×	×	×	
Pitch Bender		× *○ × (GN9)	× *○ × (GN9)	× *○ × (GN9)	× *○ × (GN9)	× *○ × (GN9)	× *○ × (GN9)	×	×	
Control Change	1	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	×	×	modulation (GN9)
	7	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	volume main volume
	11	×	×	×	×	×	×	×	*○ ×	expression pedal
	64	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	×	×	sustain
	80	×	×	*○ ×	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	×	*○ ×	×	intro, fill in, ending
	92	*○ ×	×	*○ ×	×	×	×	×	×	tremolo
	93	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	×	×	chorus (effect 2) (GN9)
	94	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	× (GN3/GN5) *○ × (GN7/GN9)	×	×	celeste (effect 1)
Prog Change		*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	*○ ×	× (GN3/GN5) *○ × (GN7/GN9)	
	True #	—	—	—	—	—	—	—	—	
System exclusive		×								
System Common	Song Pos	*○ ×								
	Song Sel	*○ ×								0~19
	Tune	×								
System Real Time	Clock	○								
	Commands	*○ ×								start/stop/continue
Aux Messages	Local ON/OFF	×	×	×	×	×	×	×	—	
	All notes OFF	○	○	○	○	○	○	○	—	
	Active Sense	○								
	Reset	×								
Notes		*○ ×............Whether or not the data for each of these items is transmitted can be set.								

Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○: Yes
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO ×: No

Organ

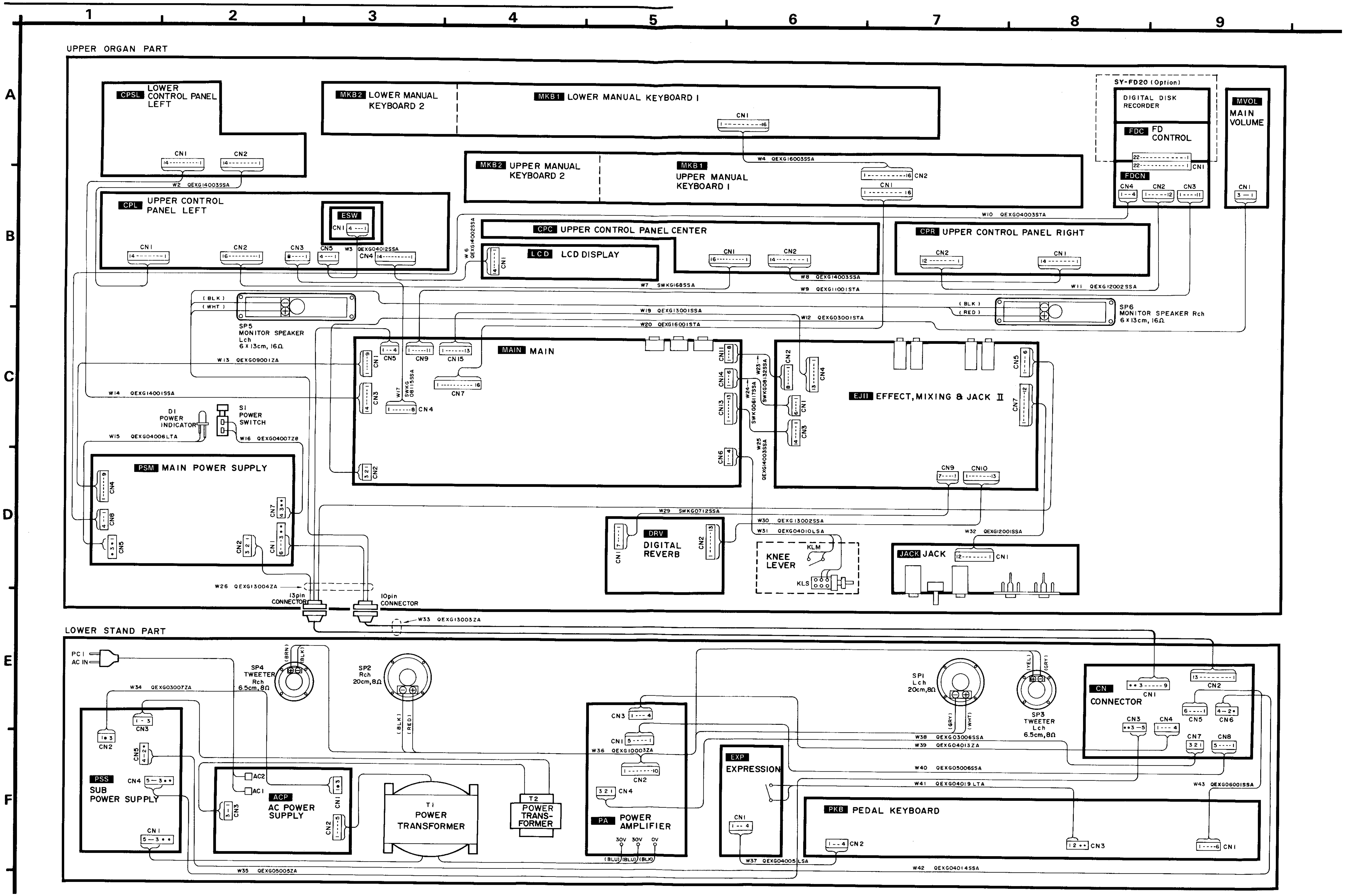
[SX-GN3(K)/SX-GN5(K)/SX-GN7(K)/SX-GN9(K)] **(Recognized)**

Function		UPPER POLY	UPPER SPECIAL SOLO (GN3/GN5)/ EXTRA (GN7/GN9)	LOWER POLY	LOWER SPECIAL SOLO (GN3/GN5)/ EXTRA (GN7/GN9)	ACCOMP 1~3	BASS	DRUMS	CONTROL	Remarks
Basic Channel	Default	1~16	1~16	1~16	1~16	1~16	1~16	1~16	1~16	memorized
	Changed	1~16	1~16	1~16	1~16	1~16	1~16	1~16	1~16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	—	—	—	—	—	—	—	—	
Note Number		0~127	0~127	0~127	0~127	0~127	0~127	0~127	—	Changes depending on the position of the Octave Shift or Transpose control.
	True voice	24~119	24~119	24~119	24~119	24~119	24~95	36~74 (GN3/GN5) 36~83 (GN7/GN9)	—	
Velocity	Note ON	○	○	○	○	○	○	○	—	
	Note OFF	×	×	×	×	×	×	×	—	
After Touch	Key's	×	×	×	×	×	×	×	×	
	Ch's	× *○× (GN9)	× *○× (GN9)	× *○× (GN9)	× *○× (GN9)	×	×	×	×	
Pitch Bender		*○×	*○×	*○×	*○×	*○×	*○×	×	×	
Control Change	1	*○×	*○×	*○×	*○×	*○×	*○×	×	×	modulation
	7	*○×	*○×	*○×	*○×	*○×	*○×	*○×	*○×	volume main volume
	11	×	×	×	×	×	×	×	*○×	expression pedal
	64	*○×	*○×	*○×	*○×	*○×	*○×	×	×	sustain
	80	×	×	*○×	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	×	*○×	×	intro, fill in, ending
	92	*○×	×	*○×	×	×	×	×	×	tremolo
	93	*○×	*○×	*○×	*○×	*○×	*○×	×	×	chorus (effect 2) (GN9)
	94	*○×	*○×	*○×	*○×	*○×	× (GN3/GN5) *○× (GN7/GN9)	×	×	celeste (effect 1)
Prog Change		*○×	*○×	*○×	*○×	*○×	*○×	*○×	× (GN3/GN5) *○× (GN7/GN9)	
	True #	0~23/0~7** 0~29/0~7** 0~35/0~15**	0~23 0~29 0~35	0~23 0~29 0~35	0~23 0~29 0~35	0~15 0~19 0~23	0~15 0~23 0~23	0~39 0~39 0~39	— 0~8 0~8	(GN3/GN5) (GN7) (GN9)
System exclusive		×								
System Common	Song Pos	*○×								
	Song Sel	*○×								0~19
	Tune	×								
System Real Time	Clock	○								
	Commands	*○×								start/stop/continue
Aux Messages	Local ON/OFF	×	×	×	×	×	×	×	—	
	All notes OFF	○	○	○	○	○	○	○	—	
	Active Sense	○								
	Reset	×								
Notes		*○×.............Whether or not the data for each of these items is received can be set. ** VSC Program Change								

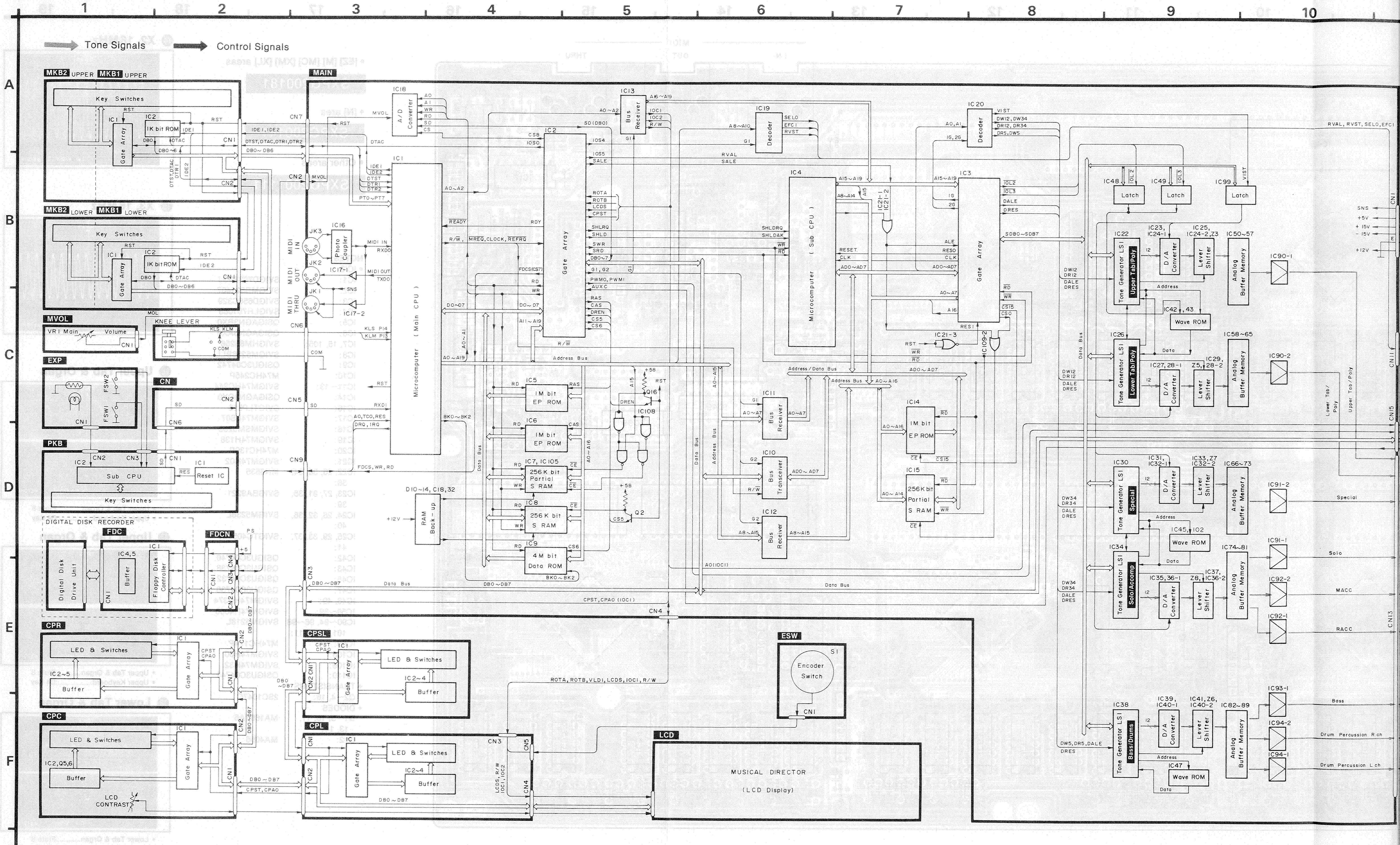
Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○: Yes
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO ×: No

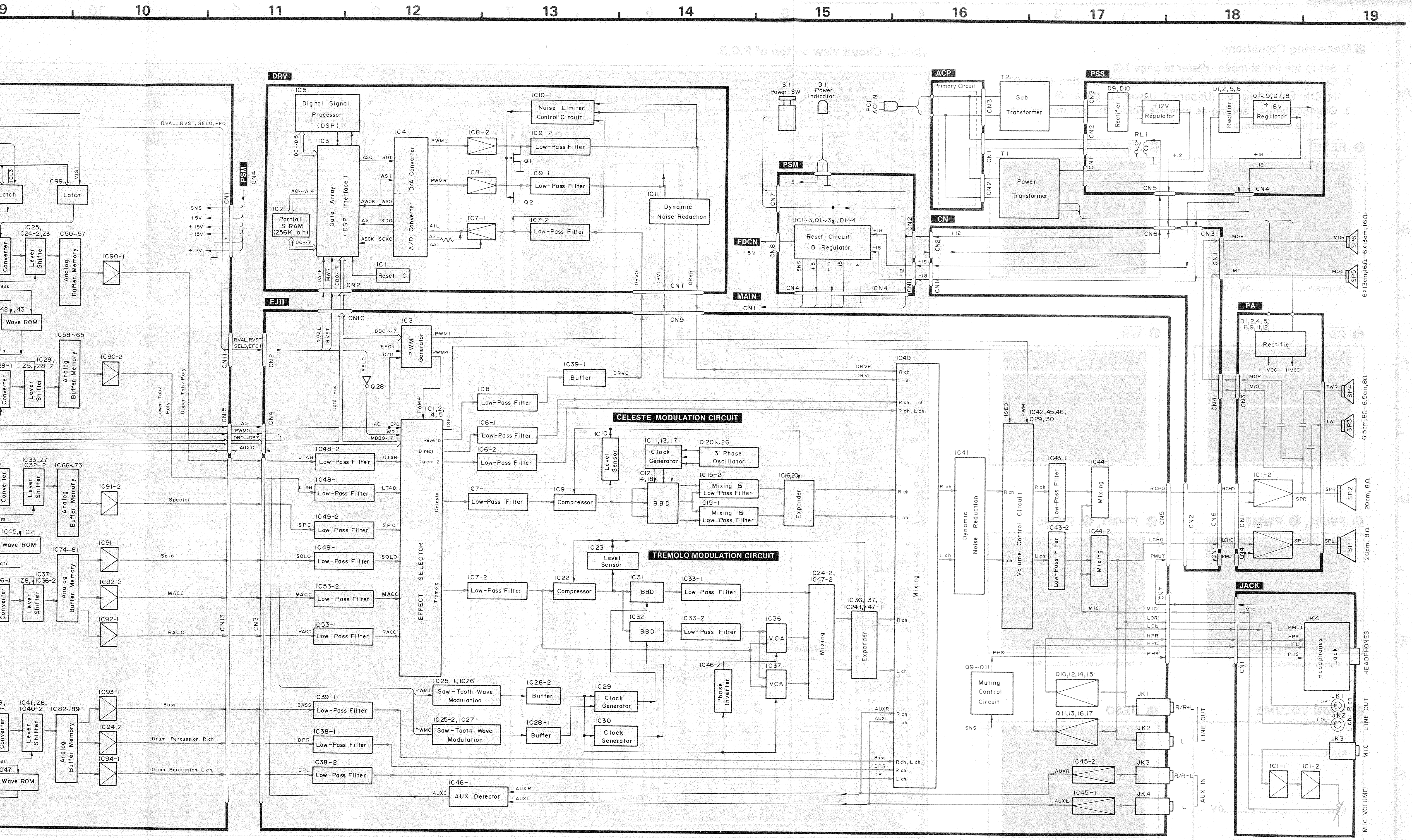
MEMO

WIRING CONNECTION DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
UPPER ORGAN PART
CPSL LOWER CONTROL PANEL LEFT
CN1
CN2
W2 QEXG14003SSA
MKB2 LOWER MANUAL KEYBOARD 2
MKB1 LOWER MANUAL KEYBOARD 1
W4 QEXG16003SSA
MKB2 UPPER MANUAL KEYBOARD 2
MKB1 UPPER MANUAL KEYBOARD 1
SY-FD20 (Option)
DIGITAL DISK RECORDER
FDC FD CONTROL
FDCN
CN4
CN3
MVOL MAIN VOLUME
W10 QEXG04003STA
CPL UPPER CONTROL PANEL LEFT
ESW
W3 QEXG04012SSA
W6 QEXG14002SSA
CPC UPPER CONTROL PANEL CENTER
LCD LCD DISPLAY
CPR UPPER CONTROL PANEL RIGHT
W7 SWKG168SSA
W8 QEXG14003SSA
W9 QEXG11001STA
W11 QEXG12002SSA
(BLK)
(WHT)
SP5 MONITOR SPEAKER Lch 6×13cm, 16Ω
(RED)
SP6 MONITOR SPEAKER Rch 6×13cm, 16Ω
W19 QEXG13001SSA
W20 QEXG16001STA
W12 QEXG03001STA
MAIN MAIN
CN5
CN9
CN15
CN7
W17 SWKG 0811SSA
W13 QEXG09001ZA
W14 QEXG14001SSA
D1 POWER INDICATOR
S1 POWER SWITCH
W15 QEXG04006LTA
W16 QEXG04007Z8
CN11
CN14
CN13
CN6
W23 SWKG0813SSA
W24 SWKG0611SSA
W25 QEXG14003SSA
EJ11 EFFECT, MIXING & JACK II
CN10
PSM MAIN POWER SUPPLY
CN8
W29 SWKG0712SSA
W30 QEXG13002SSA
W31 QEXG04010LSA
W32 QEXG12001SSA
DRV DIGITAL REVERB
KNEE LEVER
KLM
KLS
JACK JACK
W26 QEXG13004ZA
13pin CONNECTOR
10pin CONNECTOR
W33 QEXG13003ZA
LOWER STAND PART
PC1 AC IN
W34 QEXG03007ZA
SP4 TWEETER Rch 6.5cm, 8Ω
(BRN)
SP2 Rch 20cm, 8Ω
SP1 Lch 20cm, 8Ω
(YEL)
(GRY)
SP3 TWEETER Lch 6.5cm, 8Ω
CN CONNECTOR
CN6
CN7
PSS SUB POWER SUPPLY
AC2
AC1
ACP AC POWER SUPPLY
T1 POWER TRANSFORMER
T2 POWER TRANS-FORMER
W36 QEXG10003ZA
PA POWER AMPLIFIER
30V
0V
(BLU)
EXP EXPRESSION
W37 QEXG04005LSA
W38 QEXG03006SSA
W39 QEXG04013ZA
W40 QEXG05006SSA
W41 QEXG04019LTA
W43 QEXG06001SSA
PKB PEDAL KEYBOARD
W42 QEXG04014SSA
W35 QEXG05005ZA

BLOCK DIAGRAM


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
Tone Signals
Control Signals
MKB2 UPPER MKB1 UPPER
Key Switches
IC1
IC2
1K bit ROM
Gate Array
MKB2 LOWER MKB1 LOWER
MVOL
VR1 Main Volume
KNEE LEVER
EXP
FSW1
FSW2
CN
PKB
Sub CPU
Reset IC
Key Switches
DIGITAL DISK RECORDER
FDC
FDCN
Digital Disk Drive Unit
IC4,5
Buffer
Floppy Disk Controller
CPR
LED & Switches
IC2~5
Buffer
Gate Array
CPC
IC2,Q5,6
LCD CONTRAST
MAIN
IC18
A/D Converter
IC16
Photo Coupler
MIDI IN
MIDI OUT
MIDI THRU
JK1
JK2
JK3
IC17-1
IC17-2
IC1
Microcomputer (Main CPU)
IC2
Gate Array
IC13
Bus Receiver
IC5
1M bit EP ROM
IC6
1M bit EP ROM
IC7, IC105
256K bit Partial S RAM
IC8
256K bit S RAM
IC9
4M bit Data ROM
D10~14, C18,32
RAM Back-up
IC108
Q16
Q2
IC19
Decoder
IC4
Microcomputer (Sub CPU)
IC11
Bus Receiver
IC10
Bus Transceiver
IC12
Bus Receiver
IC14
1M bit EP ROM
IC15
256K bit Partial S RAM
IC20
Decoder
IC3
Gate Array
IC21-1
IC21-2
IC21-3
IC109-2
Address Bus
Data Bus
Address/Data Bus
IC48
IC49
IC99
Latch
IC22
Tone Generator LSI
Upper Tab/Poly
IC23, IC24-1
D/A Converter
IC25, IC24-2, Z3
Level Shifter
IC50~57
Analog Buffer Memory
IC42,43
Wave ROM
IC90-1
IC26
Lower Tab/Poly
IC27, 28-1
Z5, IC29, 28-2
IC58~65
IC90-2
IC30
Special
IC31, IC32-1
IC33, Z7 IC32-2
IC66~73
IC91-2
IC45, 102
IC34
Solo/Accomp
IC35, 36-1
Z8, IC37, IC36-2
IC74~81
IC91-1
IC92-2
IC92-1
IC38
Bass/Drums
IC39, IC40-1
IC41, Z6, IC40-2
IC82~89
IC47
IC93-1
IC94-2
IC94-1
RVAL, RVST, SELO, EFC1
SNS
+5V
+15V
-15V
+12V
Lower Tab/Poly
Upper Tab/Poly
Special
Solo
MACC
RACC
Bass
Drum Percussion R ch
Drum Percussion L ch
CN1
CN11
CN15
CN13
CPSL
CPL
LED & Switches
IC2~4
Buffer
ESW
S1
Encoder Switch
LCD
MUSICAL DIRECTOR
(LCD Display)
ROTA, ROTB, VLD1, LCDS, IOC1, R/W
DB0~DB7
CPST, CPA0
CPST, CPA0 (IOC1)
A0 (IOC1)
Data Bus

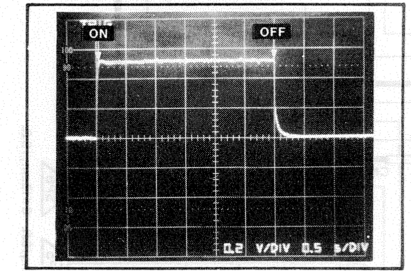

9
10
11
12
13
14
15
16
17
18
19
DRV
IC5
Digital Signal Processor (DSP)
IC3
Gate Array (DSP Interface)
IC4
D/A Converter
A/D Converter
IC2
Partial S RAM (256K bit)
IC1
Reset IC
IC8-2
IC8-1
IC7-1
IC9-2 Low-Pass Filter
IC9-1 Low-Pass Filter
IC7-2 Low-Pass Filter
IC10-1 Noise Limiter Control Circuit
IC11 Dynamic Noise Reduction
Q1
Q2
PWML
PWMR
ASO
SDI
WSI
WSO
AWCK
ASI
SDO
ASCK
SCKO
A1L
A2L
A3L
D0~D15
A0~A14
D0~7
DALE
MWR
DB0~7
CN2
CN1
DRVO
DRVL
DRVR
PSM
CN4
CN1
SNS
+5V
+15V
-15V
+12V
E
RVAL, RVST, SELO, EFCI
IC99 Latch
Latch
VIST
IOL3
IC25, IC24-2, 23
IC50~57
Converter
Lever Shifter
Analog Buffer Memory
IC90-1
42, 43
Wave ROM
IC58~65
IC29, Z5, 28-2
28-1
IC90-2
Lower Tab/Poly
Upper Tab/Poly
CN11
CN15
CN13
RVAL, RVST SELO, EFCI
A0
PWM0, 1
DB0~DB7
AUX C
IC33, Z7 IC32-2
IC66~73
IC91-2
Special
IC45, 102
Wave ROM
IC74~81
IC37, Z8, IC36-2
IC91-1
Solo
IC92-2
MACC
IC92-1
RACC
IC41, Z6, IC40-2
IC82~89
IC93-1
Bass
IC94-2
Drum Percussion R ch
IC94-1
Drum Percussion L ch
C47
Wave ROM
EJII
CN10
CN2
CN4
CN3
RVAL
RVST
Data Bus
SELO
Q28
IC3 PWM Generator
DB0~7
EFCI
C/D
PWM1
PWM4
MDB0~7
WR
IC1, 2, 4, 5
ISEO
IC39-1 Buffer
IC8-1 Low-Pass Filter
IC6-1 Low-Pass Filter
IC6-2 Low-Pass Filter
IC7-1 Low-Pass Filter
IC7-2 Low-Pass Filter
EFFECT SELECTOR
Reverb
Direct 1
Direct 2
Celeste
Tremolo
IC48-2 Low-Pass Filter
UTAB
IC48-1 Low-Pass Filter
LTAB
IC49-2 Low-Pass Filter
SPC
IC49-1 Low-Pass Filter
SOLO
IC53-2 Low-Pass Filter
MACC
IC53-1 Low-Pass Filter
RACC
IC39-1 Low-Pass Filter
BASS
IC38-1 Low-Pass Filter
DPR
IC38-2 Low-Pass Filter
DPL
IC46-1 AUX Detector
AUXC
AUXR
AUXL
CELESTE MODULATION CIRCUIT
IC10 Level Sensor
IC11, 13, 17 Clock Generator
Q20~26 3 Phase Oscillator
IC9 Compressor
IC12, 14, 18 BBD
IC15-2 Mixing & Low-Pass Filter
IC15-1 Mixing & Low-Pass Filter
IC16, 20 Expander
TREMOLO MODULATION CIRCUIT
IC23 Level Sensor
IC22 Compressor
IC31 BBD
IC32 BBD
IC33-1 Low-Pass Filter
IC33-2 Low-Pass Filter
IC36 VCA
IC37 VCA
IC24-2, IC47-2 Mixing
IC36, 37, IC24-1, 47-1 Expander
IC46-2 Phase Inverter
IC25-1, IC26 Saw-Tooth Wave Modulation
IC25-2, IC27 Saw-Tooth Wave Modulation
PWM1
PWM0
IC28-2 Buffer
IC28-1 Buffer
IC29 Clock Generator
IC30 Clock Generator
CN9
IC40 Mixing
R ch
L ch
R ch, L ch
DRVR
DRVL
IC41 Dynamic Noise Reduction
IC42, 45, 46, Q29, 30 Volume Control Circuit
IC43-1 Low-Pass Filter
IC43-2 Low-Pass Filter
IC44-1 Mixing
IC44-2 Mixing
Q9~Q11 Muting Control Circuit
PHS
SNS
Q10, 12, 14, 15
Q11, 13, 16, 17
IC45-2
IC45-1
AUXR
AUXL
Bass
DPR
DPL
MIC
RCHO
LCHO
PMUT
LOR
LOL
HPR
HPL
CN5
CN7
CN2
CN8
JK1
JK2
JK3
JK4
R/R+L
L
LINE OUT
AUX IN
S1 Power SW
D1 Power Indicator
PC1 AC IN
ACP
Primary Circuit
T2 Sub Transformer
T1 Power Transformer
CN3
CN1
CN2
PSS
D9, D10 Rectifier
IC1 +12V Regulator
D1, 2, 5, 6 Rectifier
Q1~9, D7, 8 ±18V Regulator
RL1
+12
+18
-18
CN5
CN4
PSM
+15
CN7
CN8
IC1~3, Q1~3, D1~4 Reset Circuit & Regulator
FDCN
+5V
MAIN
CN
CN6
CN3
CN1
MOR
MOL
SP6
SP5
6×13cm, 16Ω
PA
D1, 2, 4, 5, 8, 9, 11, 12 Rectifier
-VCC
+VCC
TWR
TWL
SP4
SP3
6.5cm, 8Ω
IC1-2
IC1-1
SPR
SPL
SP2
SP1
20cm, 8Ω
JACK
MIC
PMUT
HPR
HPL
PHS
Headphones Jack
HEADPHONES
LOR
LOL
JK1 R ch
JK2 L ch
LINE OUT
JK3
MIC
IC1-1
IC1-2
MIC VOLUME

MAIN CIRCUIT BOARD

■ Measuring Conditions

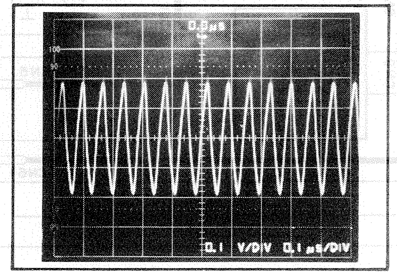
1. Set to the initial mode. (Refer to page I-3)
2. Set the all parts INITIAL TOUCH SENSE function (EFFECT MODE: Page 4) to "0". (Upper=0, Lower=0, Bass=0)
3. Change the unit setting as indicate below the pictures to confirm the waveforms.

❶ $\overline{\text{RESET}}$

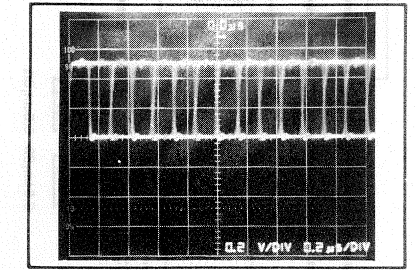


- Power SW............................ON → OFF

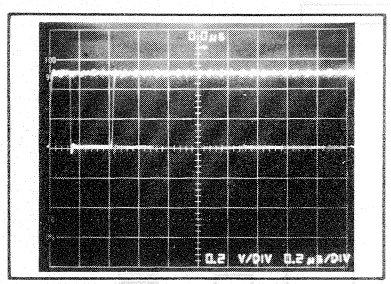
❷ X1, 14MHz



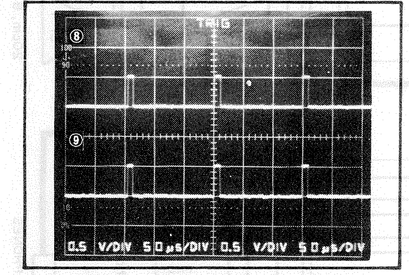
❸ $\overline{\text{RD}}$



❹ $\overline{\text{WR}}$

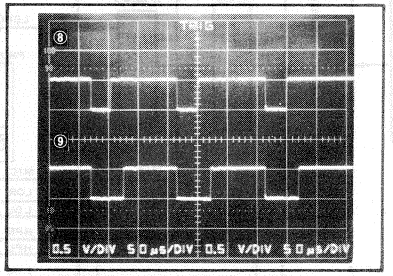


❽ PWM1, ❾ PWM0



- Tremolo Slow/Fast............Slow

❽ PWM1, ❾ PWM0



- Tremolo Slow/Fast............Fast

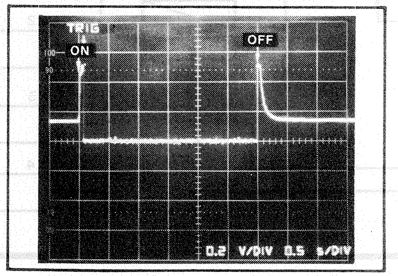
❿ MAIN VOLUME

MAX.....................................5V

∫ ∫

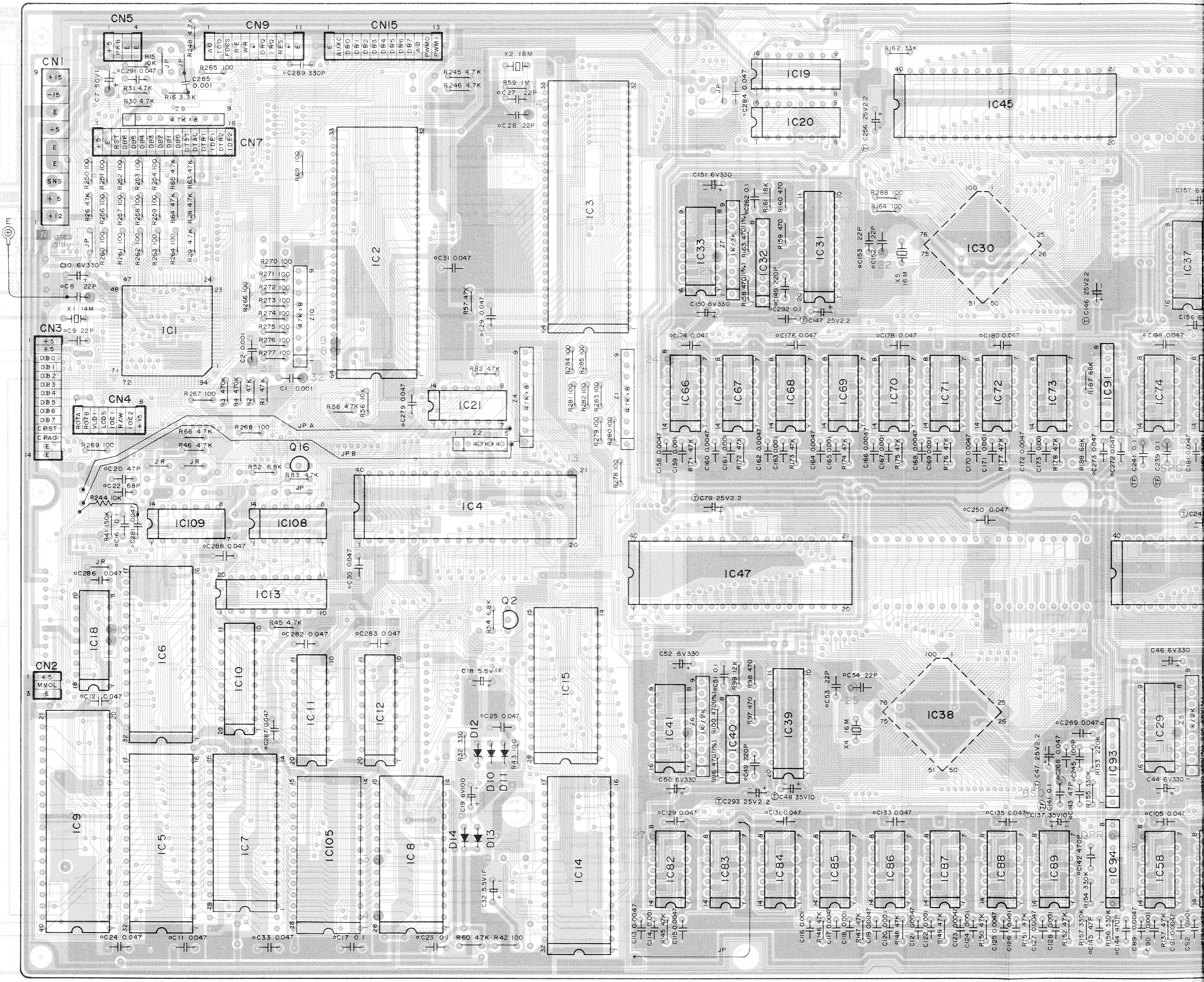
MIN.....................................0V

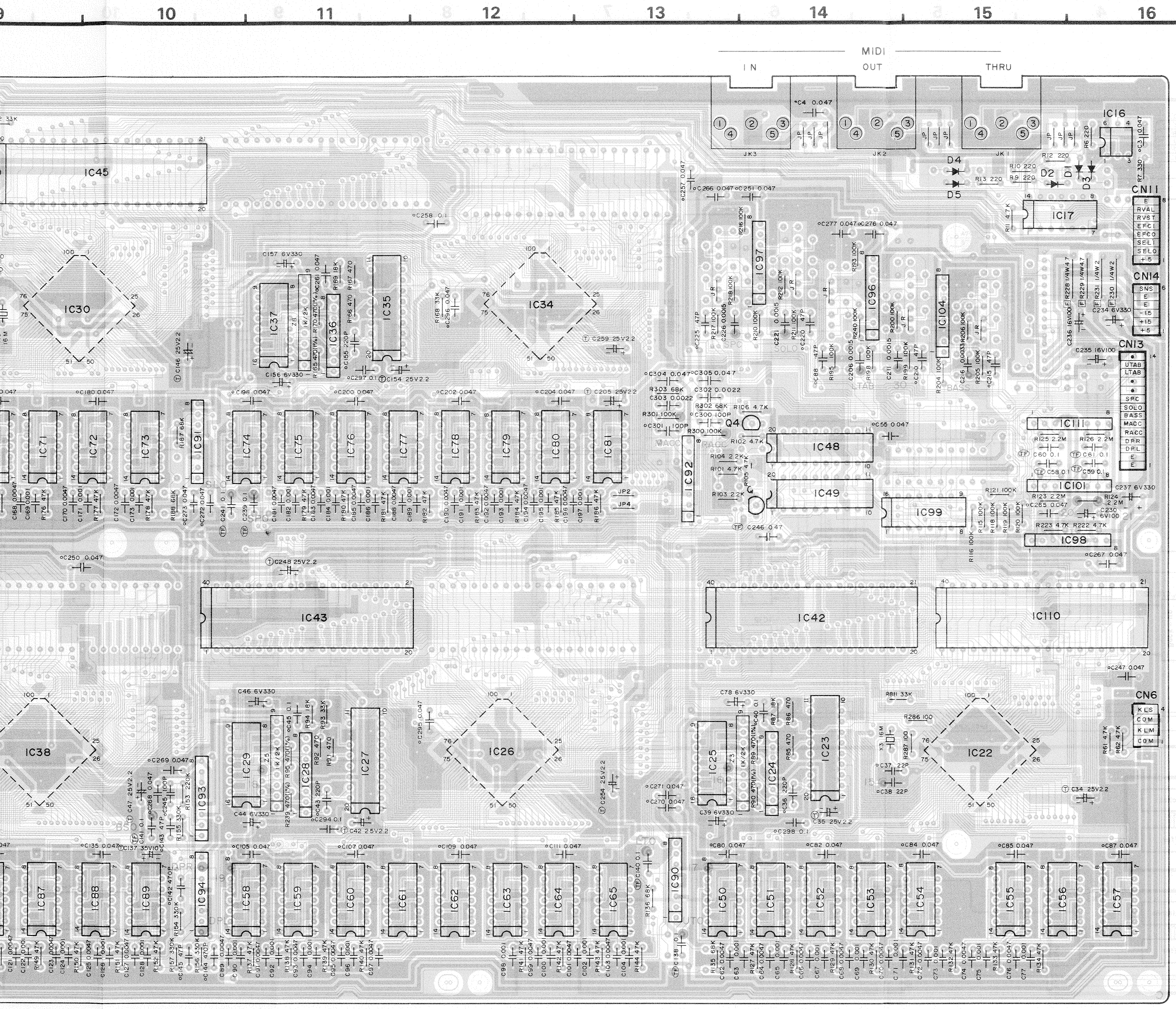
⓭ RESO



- Power SW............................ON → OFF

Circuit view on top of P.C.B.


CN1
CN2
CN3
CN4
CN5
CN7
CN9
CN15
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC18
IC19
IC20
IC21
IC29
IC30
IC31
IC32
IC33
IC37
IC38
IC39
IC40
IC41
IC45
IC47
IC58
IC66
IC67
IC68
IC69
IC70
IC71
IC72
IC73
IC74
IC82
IC83
IC84
IC85
IC86
IC87
IC88
IC89
IC91
IC93
IC94
IC105
IC108
IC109
Q2
Q16
D10
D11
D12
D13
D14
X1 14M
X2 16M
X4 16M
X5 16M
+15
-15
E
+5
SNS
+12
MMVOL


9
10
11
12
13
14
15
16
17
18
19
MIDI
IN
OUT
THRU
JK3
JK2
JK1
IC16
IC17
IC45
IC30
IC34
IC35
IC36
IC37
IC97
IC96
IC104
CN11
CN14
CN13
IC71
IC72
IC73
IC91
IC74
IC75
IC76
IC77
IC78
IC79
IC80
IC81
IC92
IC48
IC49
IC99
IC111
IC101
IC98
IC43
IC42
IC110
IC38
IC26
IC29
IC28
IC27
IC93
IC25
IC24
IC23
IC22
CN6
IC87
IC88
IC89
IC94
IC58
IC59
IC60
IC61
IC62
IC63
IC64
IC65
IC90
IC50
IC51
IC52
IC53
IC54
IC55
IC56
IC57
D1
D2
D3
D4
D5
Q4

- [EZ] [M] [MC] [XM] [XL] areas

SXPG200181

- [N] area

SXPG200141

- Other areas

SXPG2001111

NOTES:

- IC'S

IC1:	SVIGD70320GJ
IC2:	SVIGMB621407
IC3:	SVIGD656C329
IC4:	SVIGLH701088
IC5:	QSIGAGN3BX0
IC6:	QSIGAGN3AX0
IC7, 15, 105:	SVIGHM65256
IC8:	SVIGM5256BLL
IC9:	QSIGU3C04742
IC10:	M74HC245P
IC11～13:	SVIGM74HC244
IC14:	QSIGAGN3CX0
IC16:	SVIGTLP513
IC17:	SVIGM74LS07
IC18:	SVIGMSM6253
IC19:	SVIGM74H138
IC20:	M74HC139P
IC21:	SVIGM74H02
IC22, 26, 30, 34, 38:	MN6635
IC23, 27, 31, 35, 39:	SVIGBA9221
IC24, 28, 32, 36, 40:	SVIGM5238L
IC25, 29, 33, 37, 41:	SVIGTC4051BP
IC42:	QSIGU3C04740
IC43:	QSIGU3C04738
IC45:	QSIGU3C04732
IC47:	QSIGU3C04730
IC48, 49:	SVIGM74HC374
IC50～89:	SVIGM74H4066
IC90～94, 96～98, 101, 104, 111:	SVIGM5218L
IC99:	M74HC174P
IC108:	SVIGM74H00
IC109:	SVIGM74H32
IC110:	QSIGU3C04741

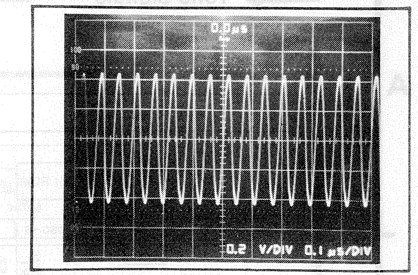
- TRANSISTORS

Q2～4, 16:	2SC1047C

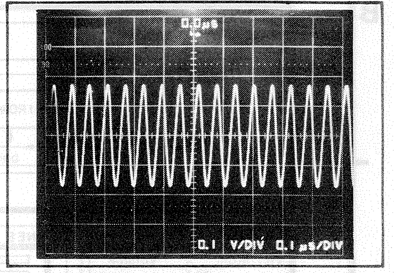
- DIODES

D1～5, 10, 11, 13, 14:	MA165TA5
D12:	MA4056

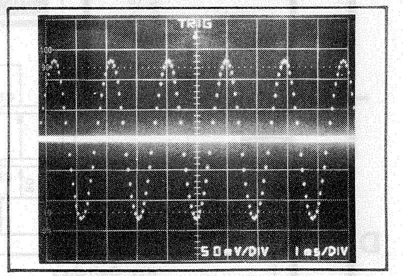
⑭ X2, 16MHz



⑮ X3, 16MHz

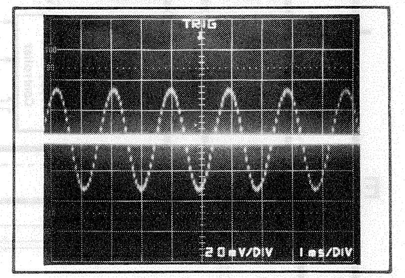


⑯ Upper Tab & Organ



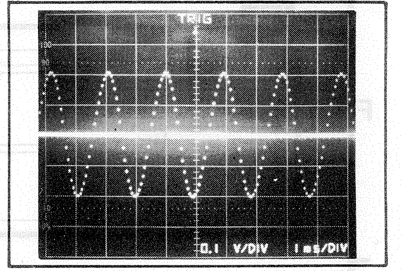
- Upper Tab & Organ............Flute 8′
- Upper Keyboard.................C4 Key

⑰ Upper Tab & Organ



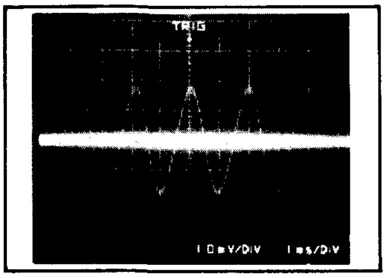
- Upper Tab & Organ............Flute 8′
- Upper Keyboard.................C4 Key

⑱ Lower Tab & Organ



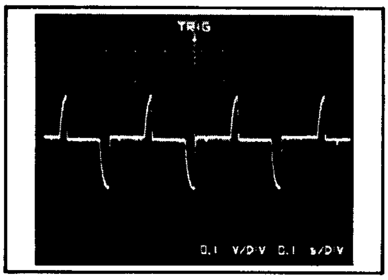
- Lower Tab & Organ............Flute 8′
- Lower Keyboard ....C4 Key

⑲ Lower Tab & Organ



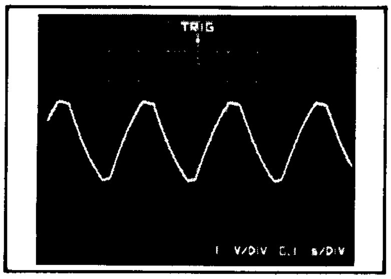
- Lower Tab & Organ............Flute 8′
- Lower Keyboard..................C4 Key

⑳



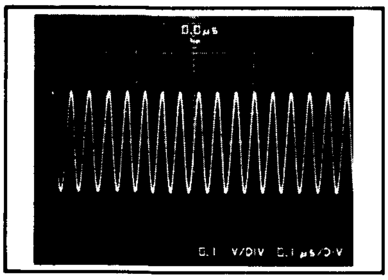
- Lower Poly..........................Mallet (Vibraphone)

㉑

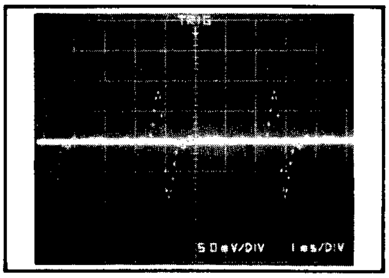


- Lower Poly..........................Mallet (Vibraphone)

㉒ X5, 16MHz

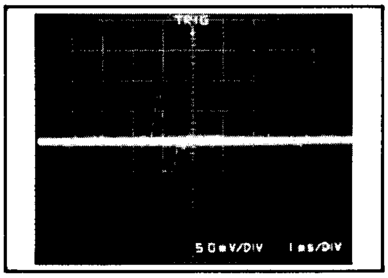


㉓ Special



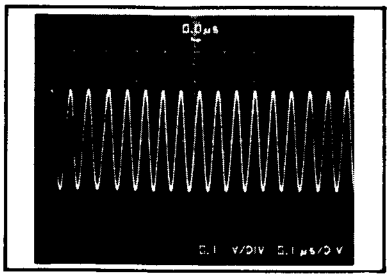
- Upper Special.....................Trumpet
- Upper Keyboard..................C4 Key

㉔ Special

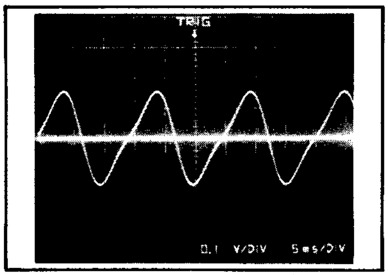


- Upper Special.....................Trumpet
- Upper Keyboard..................C4 Key

㉕ X4, 16MHz

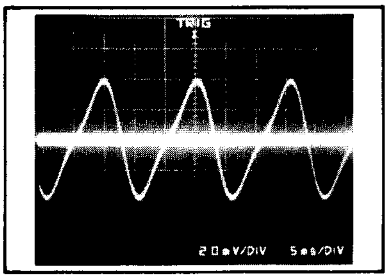


㉖ Bass



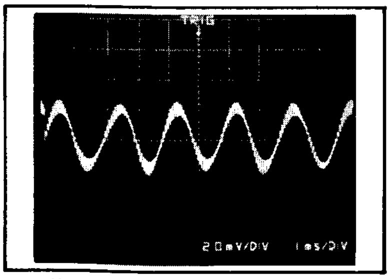
- Bass.....................................Organ
- Pedal Keyboard..................C2 Key

㉗ Bass



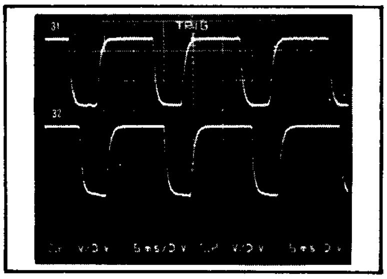
- Bass.....................................Organ
- Pedal Keyboard..................C2 Key

㉚ UTAB



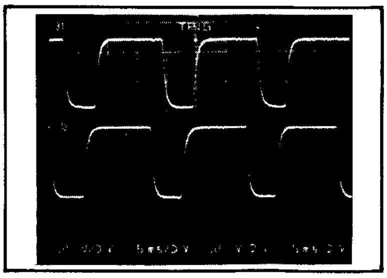
- Upper Tab & Organ............Flute 8′
- Upper Keyboard..................C4 Key

㉛ ROTA, ㉜ ROTB



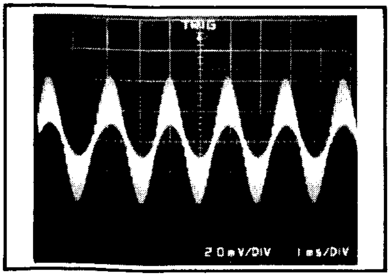
- Tempo/Program..................Clockwise

㉛ ROTA, ㉜ ROTB



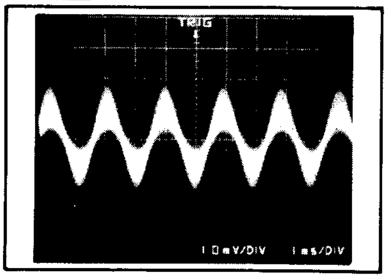
- Tempo/Program..................Counter-clockwise

UTO



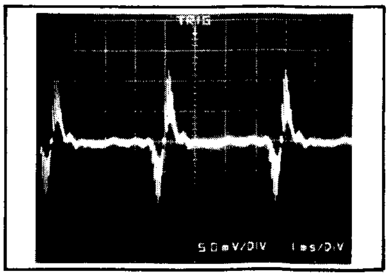
- Upper Tab & Organ............Flute 8′
- Upper Keyboard..................C4 Key

LTO



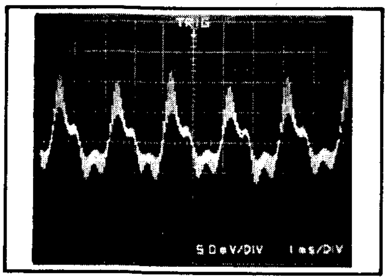
- Lower Tab & Organ............Flute 8′
- Lower Keyboard..................C4 Key

SPO



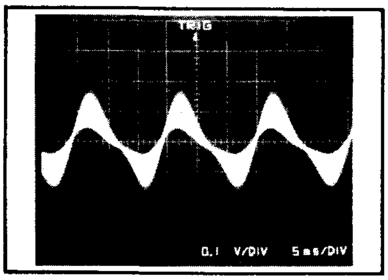
- Upper Special.....................Trumpet
- Upper Keyboard..................C4 Key

SLO



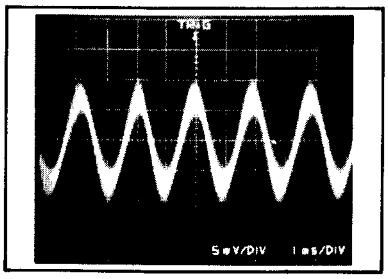
- Upper Solo ....Flute
- Upper Keyboard..................C4 Key

BSO



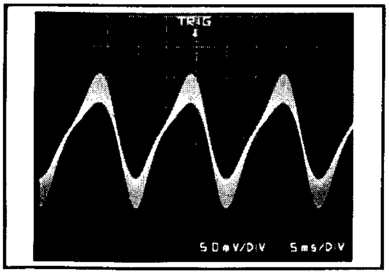
- Bass ....Organ
- Pedal Keyboard ....C2 Key

LTAB



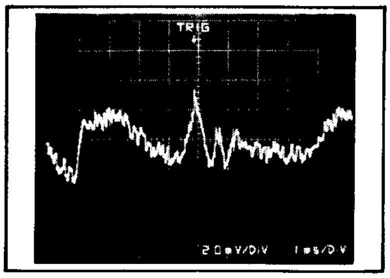
- Lower Tab & Organ............Flute 8′
- Lower Keyboard ....C4 Key

BASS



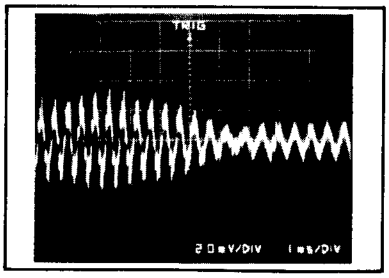
- Bass ....Organ
- Pedal Key............................C2 Key

MACC



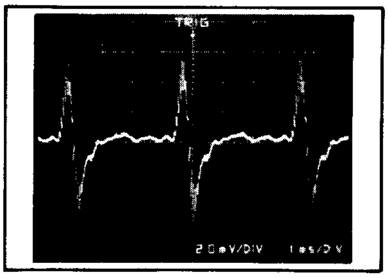
- Rhythm ....Hard Rock
- Arranger...............................Accomp 2 & 3
- LKB: C Key • Start/Stop=Start

DPR



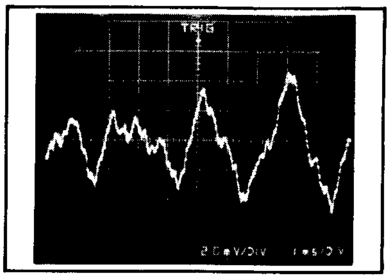
- Keyboard Perc. ....ON
- Lower Keyboard ....Whistle 1

SPC



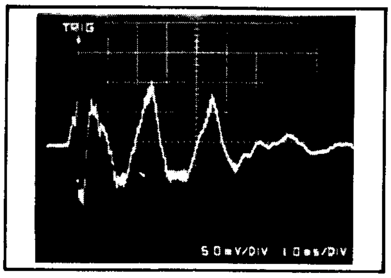
- Upper Special ....Trumpet
- Upper Keyboard..................C4 Key

RACC



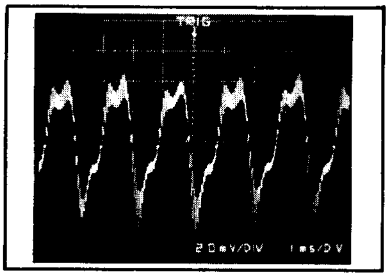
- Rhythm ....Hard Rock
- Arranger...............................Accomp 1
- LKB: C Key • Start/Stop=Start

DPL



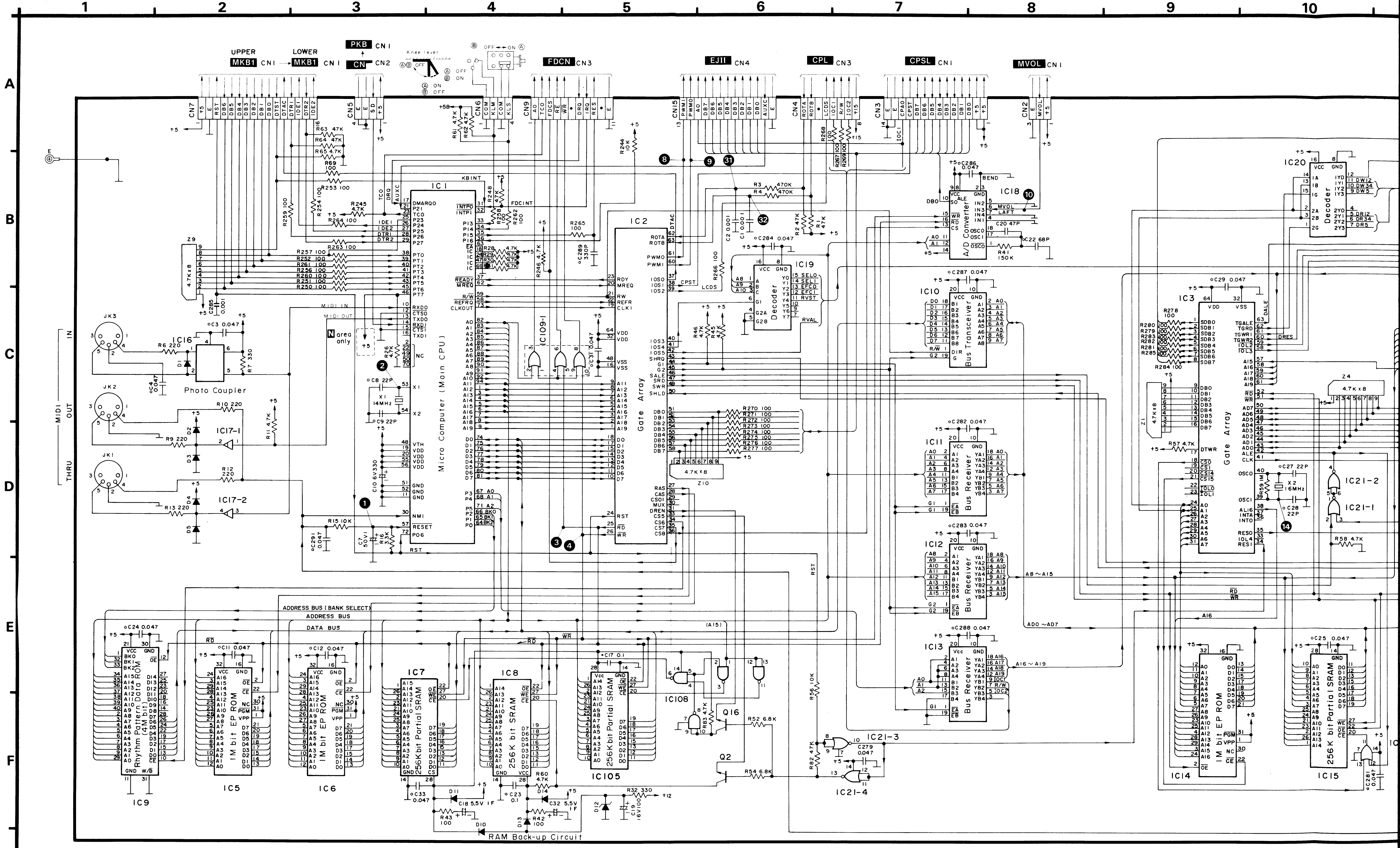
- Keyboard Perc. ....ON
- Lower Keyboard ....Bass Drum 1

SOLO

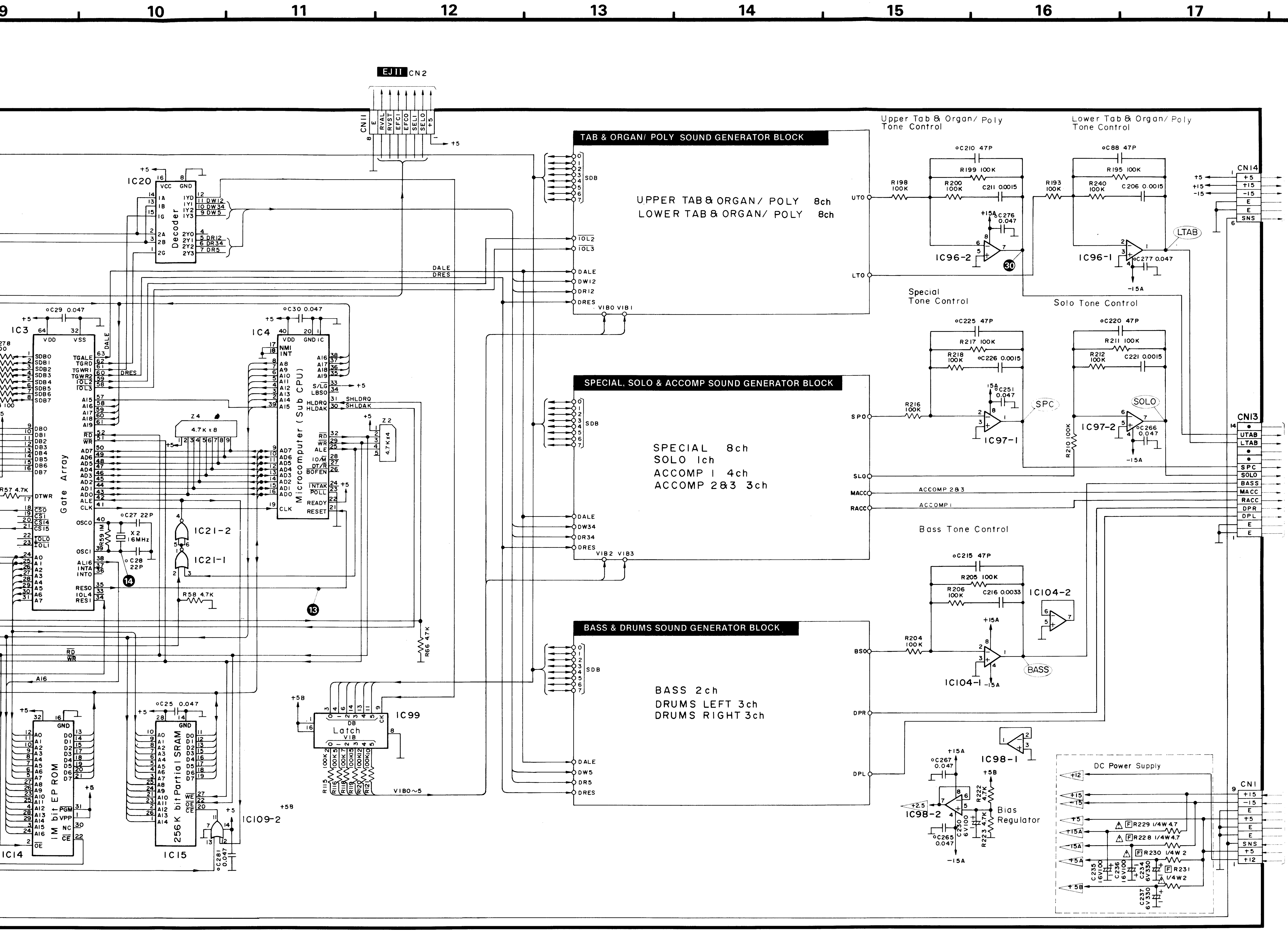


- Upper Solo ....Flute
- Upper Keyboard..................C4 Key

MAIN CIRCUIT DIAGRAM



1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
UPPER MKB1 CN1 → LOWER MKB1 CN1
PKB CN1
CN CN2
Knee lever
FDCN CN3
EJII CN4
CPL CN3
CPSL CN1
MVOL CN1
CN7
CN5
CN6
CN9
CN15
CN4
CN3
CN2
IC1
Micro Computer (Main CPU)
IC2
Gate Array
IC3
Gate Array
IC10
Bus Transceiver
IC11
Bus Receiver
IC12
Bus Receiver
IC13
Bus Receiver
IC18
A/D Converter
IC19
Decoder
IC20
Decoder
IC16
Photo Coupler
IC17-1
IC17-2
IC109-1
IC108
IC21-1
IC21-2
IC21-3
IC21-4
JK3
JK2
JK1
MIDI IN
OUT
THRU
N area only
X1 14MHz
X2 16MHz
Z9 4.7K×8
Z10 4.7K×8
Z1 4.7K×8
Z4 4.7K×8
ADDRESS BUS (BANK SELECT)
ADDRESS BUS
DATA BUS
IC9
Rhythm Pattern Data ROM (4M bit)
IC5
1M bit EP ROM
IC6
1M bit EP ROM
IC7
256Kbit Partial SRAM
IC8
256K bit SRAM
IC105
256K bit Partial SRAM
IC14
1M bit EP ROM
IC15
256K bit Partial SRAM
Q16
Q2
RAM Back-up Circuit
A8 ~ A15
AD0 ~ AD7
A16 ~ A19


9
10
11
12
13
14
15
16
17
18
19
EJII CN2
CN11
TAB & ORGAN/ POLY SOUND GENERATOR BLOCK
UPPER TAB & ORGAN/ POLY 8ch
LOWER TAB & ORGAN/ POLY 8ch
SDB
IOL2
IOL3
DALE
DW12
DR12
DRES
VIB0 VIB1
UTO
LTO
Upper Tab & Organ/ Poly Tone Control
Lower Tab & Organ/ Poly Tone Control
IC96-2
IC96-1
LTAB
Special Tone Control
Solo Tone Control
SPECIAL, SOLO & ACCOMP SOUND GENERATOR BLOCK
SPECIAL 8ch
SOLO 1ch
ACCOMP 1 4ch
ACCOMP 2&3 3ch
SPO
SLO
MACC
RACC
DW34
DR34
VIB2 VIB3
IC97-1
IC97-2
SPC
SOLO
ACCOMP 2&3
ACCOMP 1
Bass Tone Control
IC104-2
IC104-1
BASS
BASS & DRUMS SOUND GENERATOR BLOCK
BASS 2ch
DRUMS LEFT 3ch
DRUMS RIGHT 3ch
BSO
DPR
DPL
DW5
DR5
IC98-1
IC98-2
Bias Regulator
DC Power Supply
CN14
EJII CN1
CN13
EJII CN2
CN1
PSM CN4
IC20
Decoder
IC3
Gate Array
IC4
Microcomputer (Sub CPU)
Z4 4.7K×8
Z2 4.7K×4
IC21-2
IC21-1
X2 16MHz
IC99
Latch
VIB0~5
IC14
1M bit EP ROM
IC15
256K bit Partial SRAM
IC109-2
DALE
DRES
A16
RD
WR

NOTES:

- IC'S

IC1:	SVIGD70320GJ
IC2:	SVIGMB621407
IC3:	SVIGD656C329
IC4:	SVIGLH701088
IC5:	QSIGAGN3BX0
IC6:	QSIGAGN3AX0
IC7, 15, 105:	SVIGHM65256
IC8:	SVIGM5256BLL
IC9:	QSIGU3C04742
IC10:	M74HC245P
IC11~13:	SVIGM74HC244
IC14:	QSIGAGN3CX0
IC16:	SVIGTLP513
IC17:	SVIGM74LS07
IC18:	SVIGMSM6253
IC19:	SVIGM74H138
IC20:	M74HC139P
IC21:	SVIGM74H02
IC22, 26, 30, 34, 38:	MN6635
IC23, 27, 31, 35, 39:	SVIGBA9221
IC24, 28, 32, 36, 40:	SVIGM5238L
IC25, 29, 33, 37, 41:	SVIGTC4051BP
IC42:	QSIGU3C04740
IC43:	QSIGU3C04738
IC45:	QSIGU3C04732
IC47:	QSIGU3C04730
IC48, 49:	SVIGM74HC374
IC50~89:	SVIGM74H4066
IC90~94, 96~98, 101, 104, 111:	SVIGM5218L
IC99:	M74HC174P
IC108:	SVIGM74H00
IC109:	SVIGM74H32
IC110:	QSIGU3C04741

- TRANSISTORS

Q2~4, 16:	2SC1047C

- DIODES

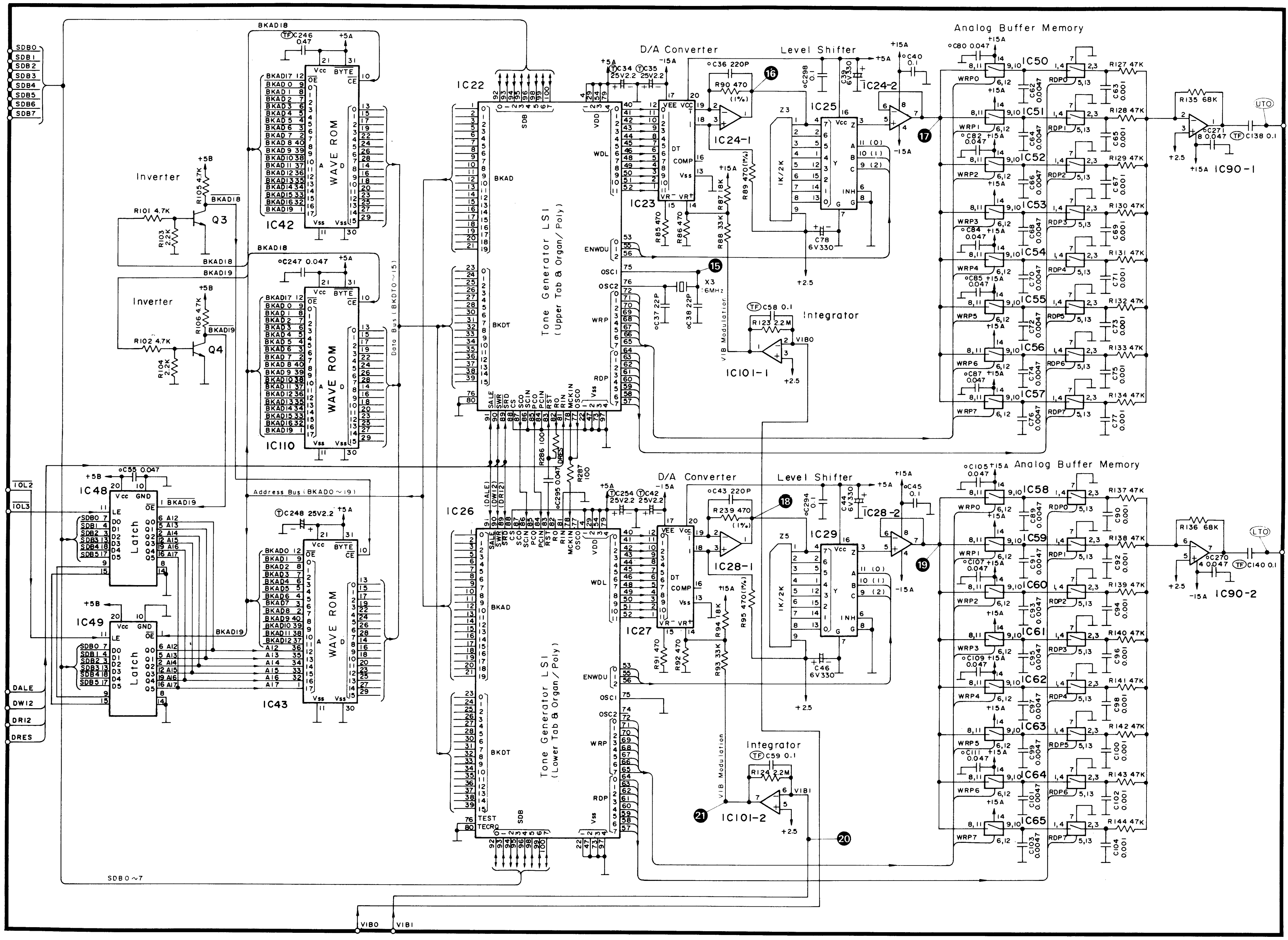
D1~5, 10, 11, 13, 14:	MA165TA5
D12:	MA4056

MAIN CIRCUIT SOUND GENERATORS

1 2 3 4 5 6 7 8 9 10

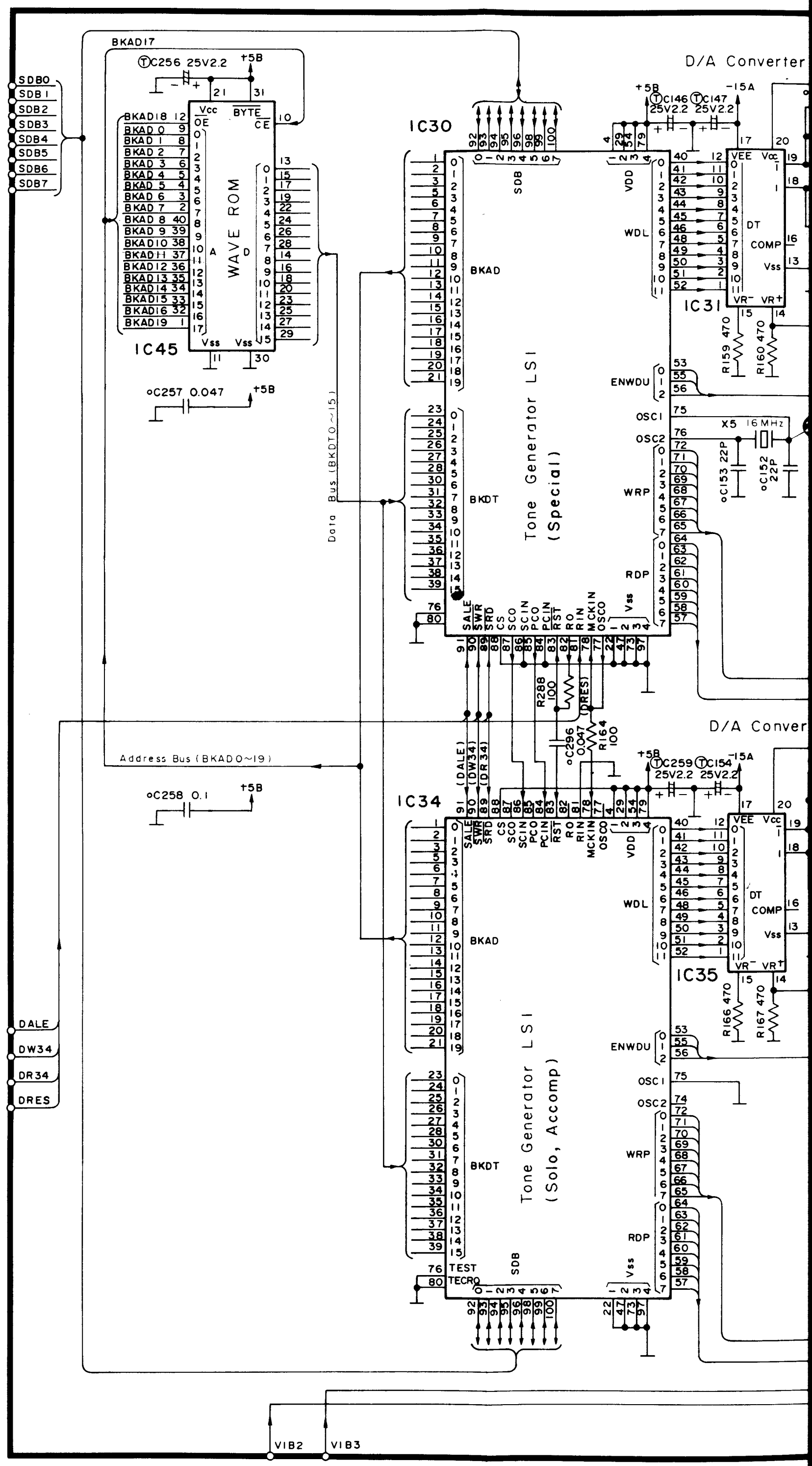
A B C D E F

■ TAB & ORGAN / POLY SOUND GENERATOR BLOCK



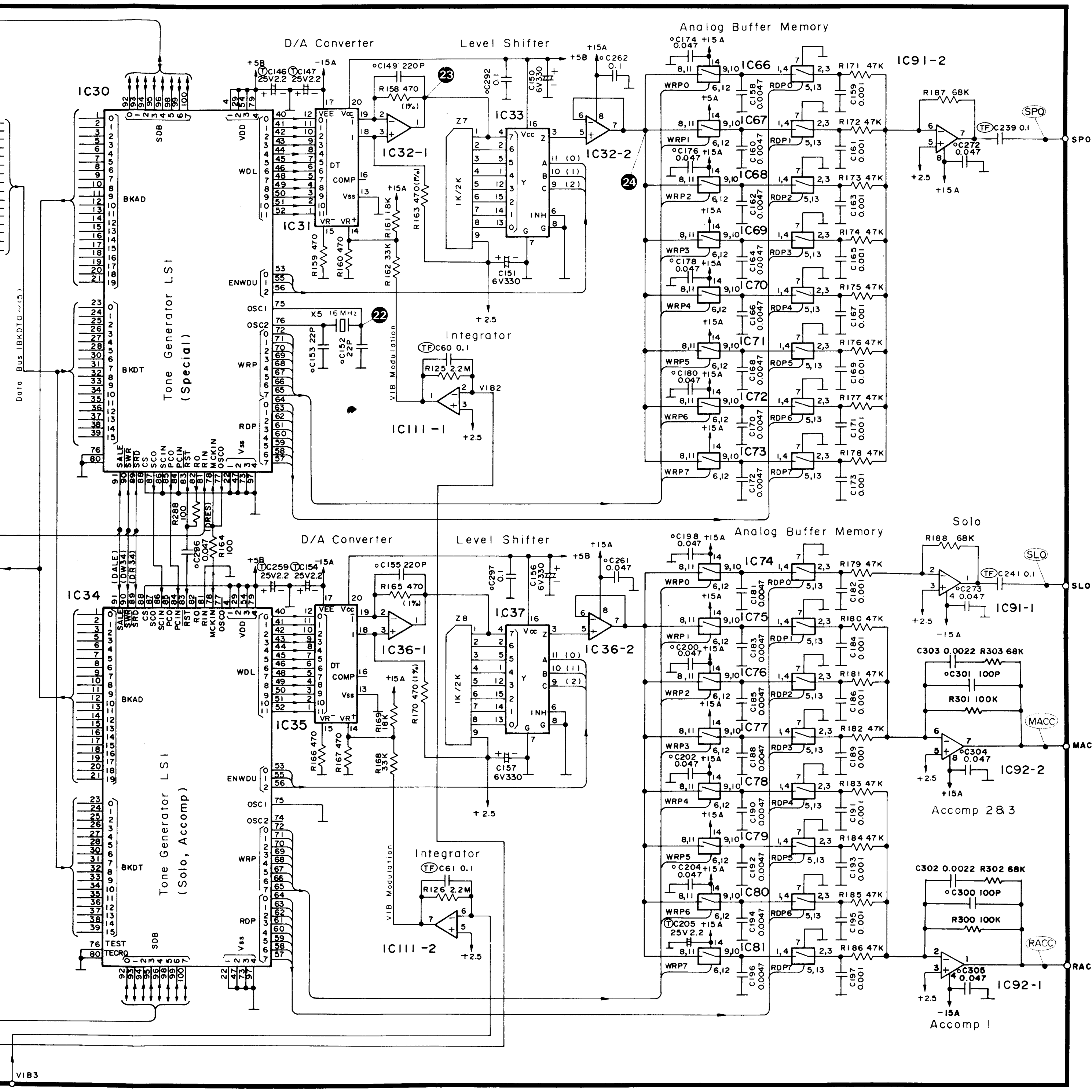
SDB0
SDB1
SDB2
SDB3
SDB4
SDB5
SDB6
SDB7
Inverter
R101 4.7K
R103 22K
R105 4.7K
Q3
Inverter
R102 4.7K
R104 22K
R106 4.7K
Q4
BKAD18
BKAD19
IC42
WAVE ROM
IC110
WAVE ROM
IC43
WAVE ROM
C246 .047
C247 0.047
C248 25V2.2
IC48
Latch
IC49
Latch
C55 0.047
IOL2
IOL3
DALE
DW12
DR12
DRES
Address Bus (BKAD0~19)
Data Bus (BKDT0~15)
SDB0~7
IC22
Tone Generator LSI (Upper Tab & Organ/Poly)
IC26
Tone Generator LSI (Lower Tab & Organ/Poly)
BKAD
BKDT
ENWDU
OSC1
OSC2
WRP
RDP
X3 16MHz
C37 22P
C38 22P
D/A Converter
IC23
IC27
IC24-1
IC28-1
C36 220P
R90 470
C43 220P
R239 470
Level Shifter
IC25
IC29
IC24-2
IC28-2
IK/2K
C78 6V330
C46 6V330
Integrator
C58 0.1
R123 2.2M
IC101-1
C59 0.1
R124 2.2M
IC101-2
VIB Modulation
VIB0
VIB1
Analog Buffer Memory
IC50
IC51
IC52
IC53
IC54
IC55
IC56
IC57
IC58
IC59
IC60
IC61
IC62
IC63
IC64
IC65
WRP0
WRP1
WRP2
WRP3
WRP4
WRP5
WRP6
WRP7
RDP0
RDP1
RDP2
RDP3
RDP4
RDP5
RDP6
RDP7
R135 68K
C271
C138 0.1
IC90-1
UTO
R136 68K
C270
C140 0.1
IC90-2
LTO
⑮
⑯
⑰
⑱
⑲
⑳
㉑

■ SPECIAL, SOLO & ACCOMP SOUND GENERATOR

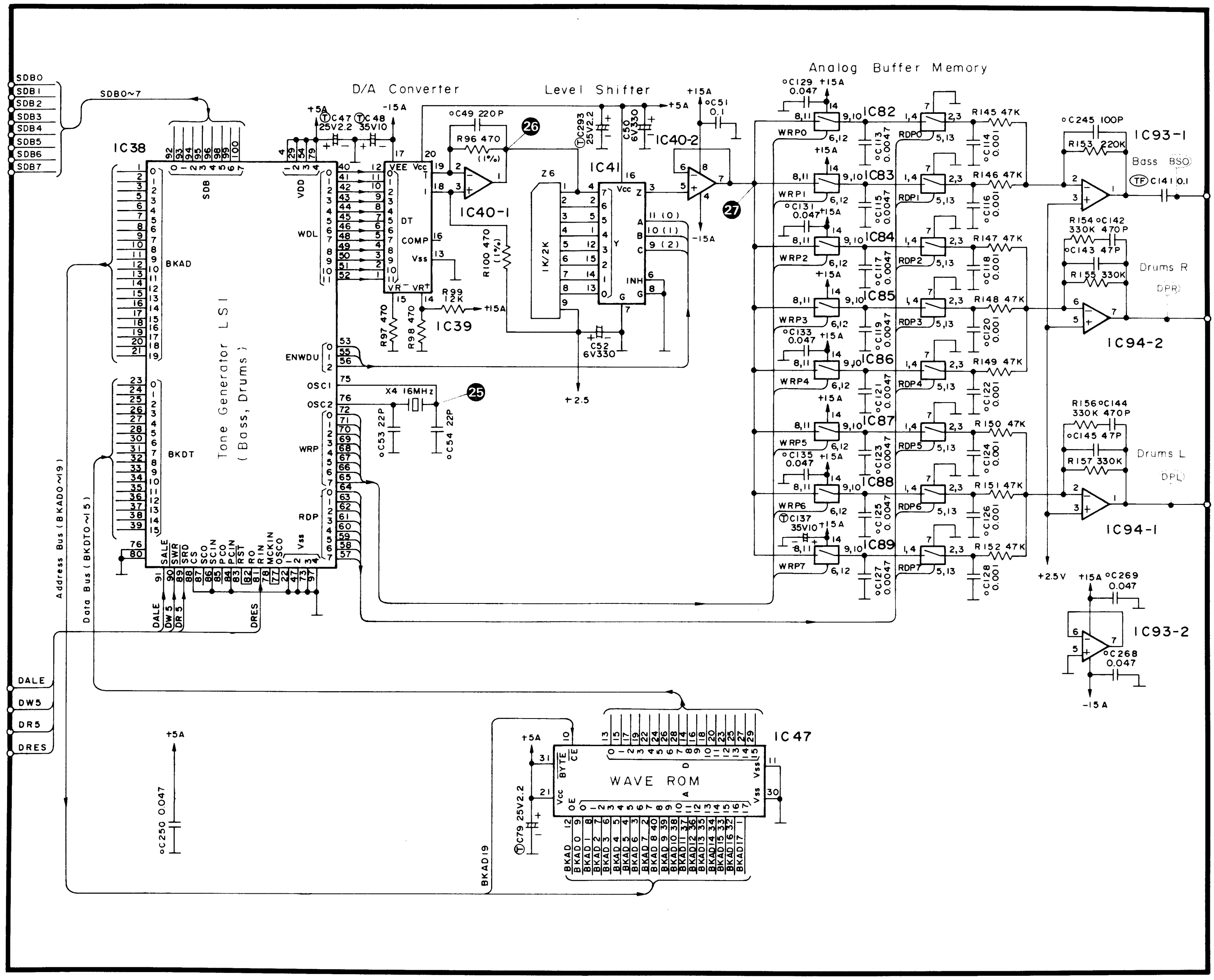


SDB0
SDB1
SDB2
SDB3
SDB4
SDB5
SDB6
SDB7
BKAD17
C256 25V2.2
IC45
WAVE ROM
C257 0.047
C258 0.1
Address Bus (BKAD0~19)
Data Bus (BKDT0~15)
IC30
Tone Generator LSI (Special)
IC34
Tone Generator LSI (Solo, Accomp)
IC31
IC35
D/A Converter
X5 16MHz
DALE
DW34
DR34
DRES
VIB2
VIB3

& ACCOMP SOUND GENERATOR BLOCK


D/A Converter
Level Shifter
Analog Buffer Memory
IC30
Tone Generator LSI (Special)
IC31
IC32-1
IC32-2
IC33
IC66
IC67
IC68
IC69
IC70
IC71
IC72
IC73
IC91-2
SPO
X5 16MHz
Integrator
IC111-1
VIB2
VIB Modulation
Solo
SLO
IC91-1
IC34
Tone Generator LSI (Solo, Accomp)
IC35
IC36-1
IC36-2
IC37
IC74
IC75
IC76
IC77
IC78
IC79
IC80
IC81
IC92-2
MACC
Accomp 2&3
IC92-1
RACC
Accomp 1
IC111-2
VIB3
Data Bus (BKDT0~15)
BKAD
BKDT
ENWDU
OSC1
OSC2
WRP
RDP
SDB
WDL
22
23
24

■ BASS & DRUMS SOUND GENERATOR BLOCK


SDB0
SDB1
SDB2
SDB3
SDB4
SDB5
SDB6
SDB7
SDB0~7
D/A Converter
Level Shifter
Analog Buffer Memory
IC38
Tone Generator LSI (Bass, Drums)
IC39
IC40-1
IC40-2
IC41
IC82
IC83
IC84
IC85
IC86
IC87
IC88
IC89
IC93-1
Bass
BSO
Drums R
DPR
IC94-2
Drums L
DPL
IC94-1
IC93-2
X4 16MHz
IC47
WAVE ROM
Address Bus (BKAD0~19)
Data Bus (BKDT0~15)
DALE
DWS
DRS
DRES
BKAD19
25
26
27

NOTES:

- IC'S

IC1: SVIGD70320GJ
IC2: SVIGMB621407
IC3: SVIGD656C329
IC4: SVIGLH701088
IC5: QSIGAGN3BX0
IC6: QSIGAGN3AX0
IC7, 15, 105: SVIGHM65256
IC8: SVIGM5256BLL
IC9: QSIGU3C04742
IC10: M74HC245P
IC11~13: SVIGM74HC244
IC14: QSIGAGN3CX0
IC16: SVIGTLP513
IC17: SVIGM74LS07
IC18: SVIGMSM6253
IC19: SVIGM74H138
IC20: M74HC139P
IC21: SVIGM74H02
IC22, 26, 30, 34, 38: MN6635
IC23, 27, 31, 35, 39: SVIGBA9221
IC24, 28, 32, 36, 40: SVIGM5238L
IC25, 29, 33, 37, 41: SVIGTC4051BP
IC42: QSIGU3C04740
IC43: QSIGU3C04738
IC45: QSIGU3C04732
IC47: QSIGU3C04730
IC48, 49: SVIGM74HC374
IC50~89: SVIGM74H4066
IC90~94, 96~98, 101, 104, 111: SVIGM5218L
IC99: M74HC174P
IC108: SVIGM74H00
IC109: SVIGM74H32
IC110: QSIGU3C04741

- TRANSISTORS

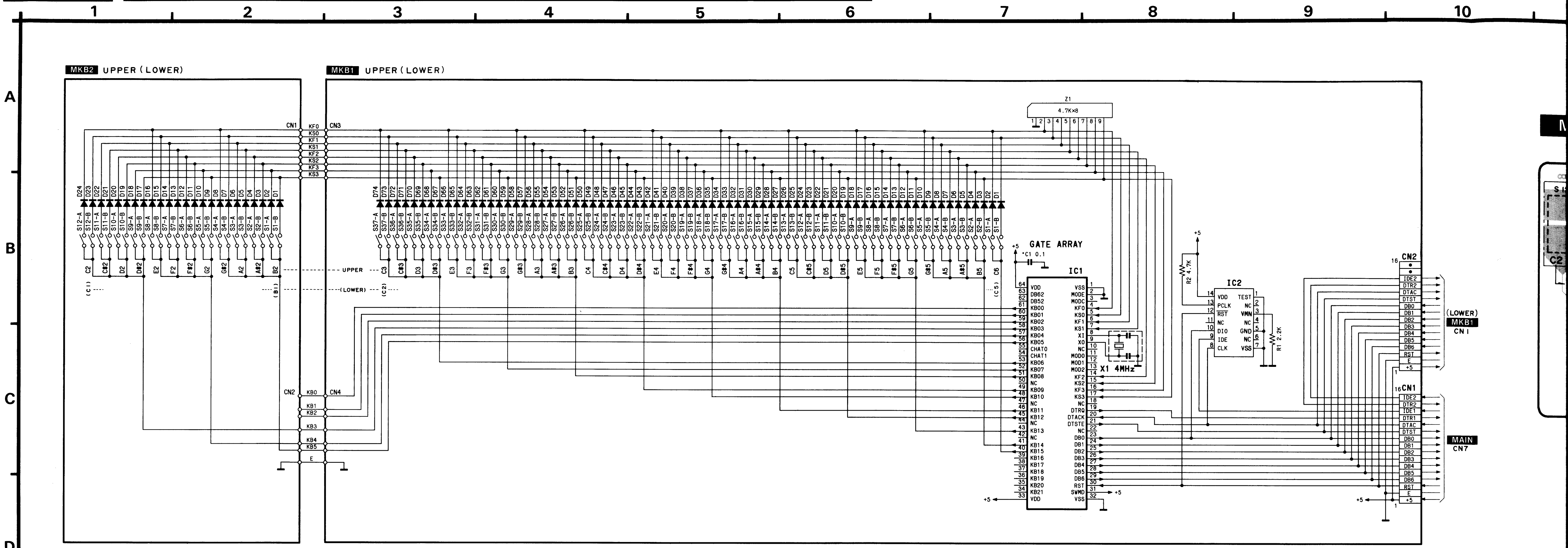
Q2~4, 16: 2SC1047C

- DIODES

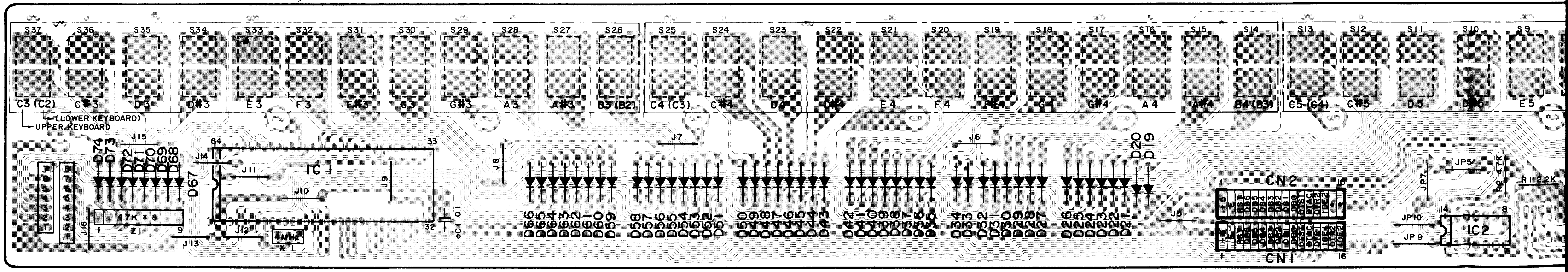
D1~5, 10, 11, 13, 14: MA165TA5
D12: MA4056

MKB

MANUAL KEYBOARD CIRCUIT DIAGRAM & CIRCUIT BOARD

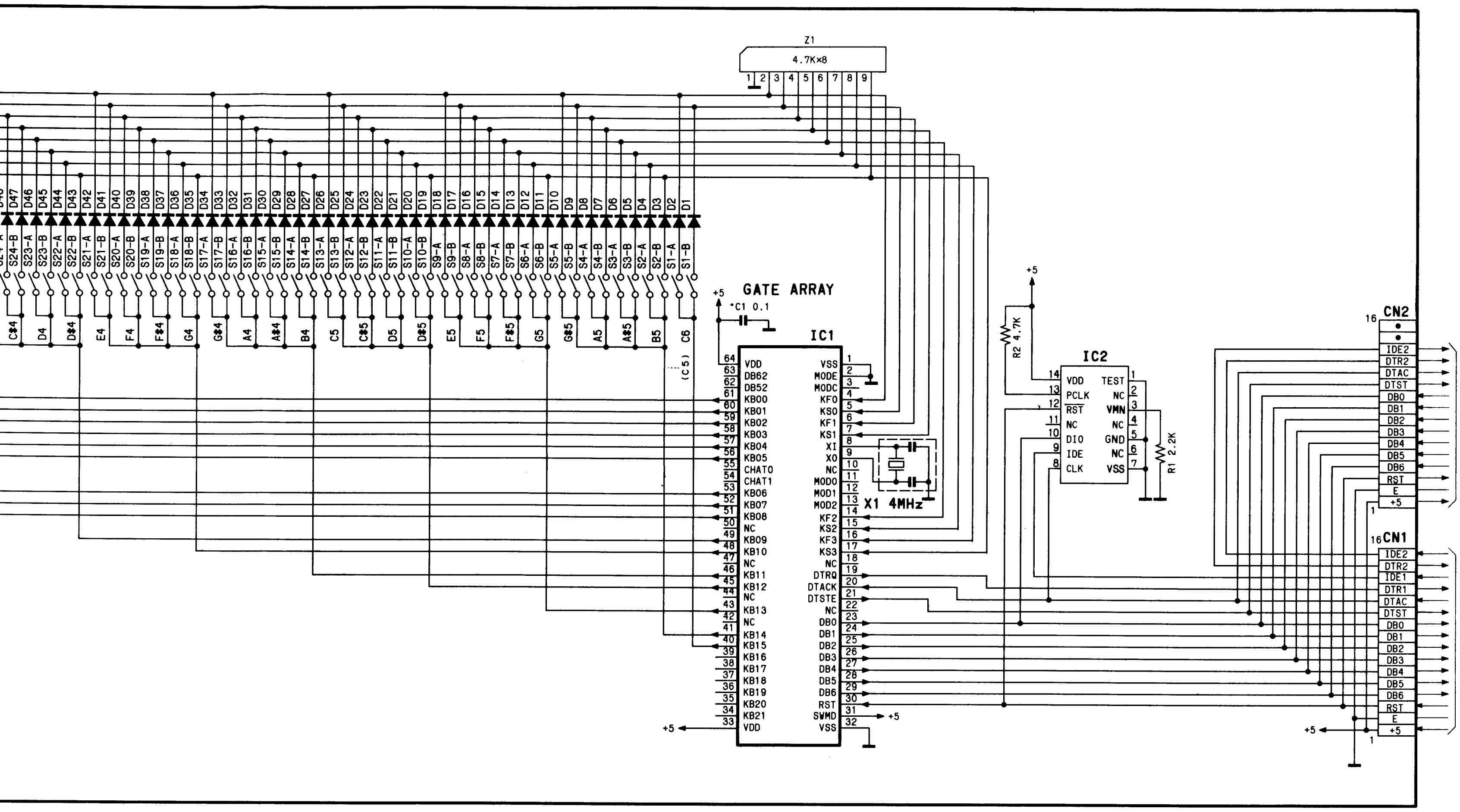

1
2
3
4
5
6
7
8
9
10
A
B
C
D
MKB2 UPPER (LOWER)
MKB1 UPPER (LOWER)
CN1
CN3
CN2
CN4
KF0
KS0
KF1
KS1
KF2
KS2
KF3
KS3
KB0
KB1
KB2
KB3
KB4
KB5
E
UPPER
(LOWER)
Z1
4.7K×8
GATE ARRAY
IC1
C1 0.1
X1 4MHz
IC2
R2 4.7K
R1 2.2K
CN2
CN1
(LOWER)
MKB1
CN1
MAIN
CN7
+5

MKB1


E
F
S37
S36
S35
S34
S33
S32
S31
S30
S29
S28
S27
S26
S25
S24
S23
S22
S21
S20
S19
S18
S17
S16
S15
S14
S13
S12
S11
S10
S9
C3 (C2)
C#3
D3
D#3
E3
F3
F#3
G3
G#3
A3
A#3
B3 (B2)
C4 (C3)
C#4
D4
D#4
E4
F4
F#4
G4
G#4
A4
A#4
B4 (B3)
C5 (C4)
C#5
D5
D#5
E5
(LOWER KEYBOARD)
UPPER KEYBOARD
IC1
IC2
CN2
CN1
Z1
4.7K × 8
4MHz
X1
C1 0.1
R2 4.7K
R1 2.2K

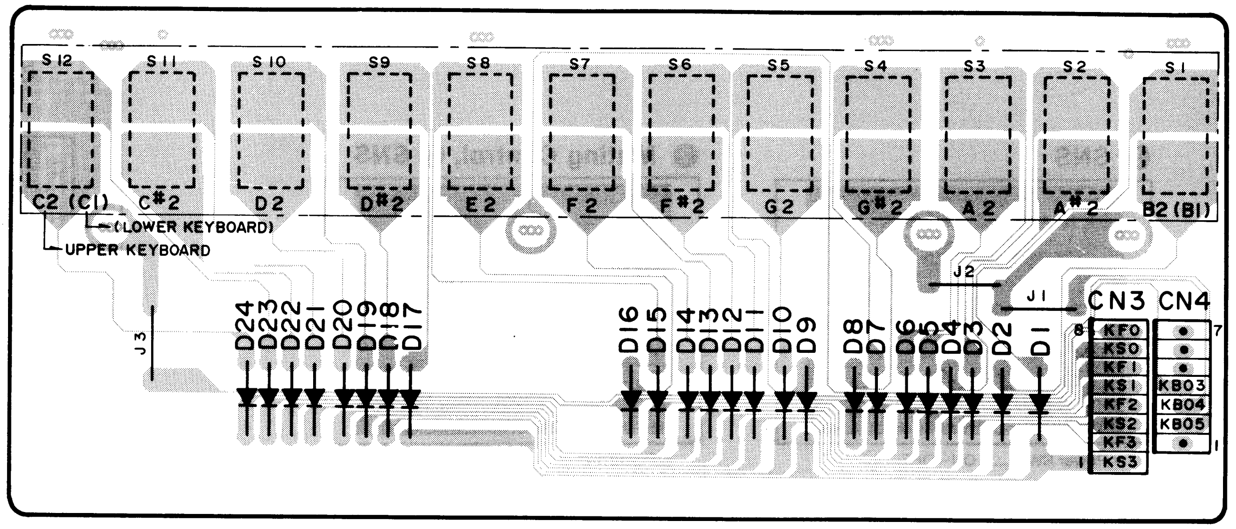
AM & CIRCUIT BOARD

5 6 7 8 9 10 11 12 13 14


Z1
4.7K×8
GATE ARRAY
C1 0.1
IC1
IC2
R2 4.7K
R1 2.2K
X1 4MHz
CN2
CN1
(LOWER)
MKB1
CN1
MAIN
CN7
+5

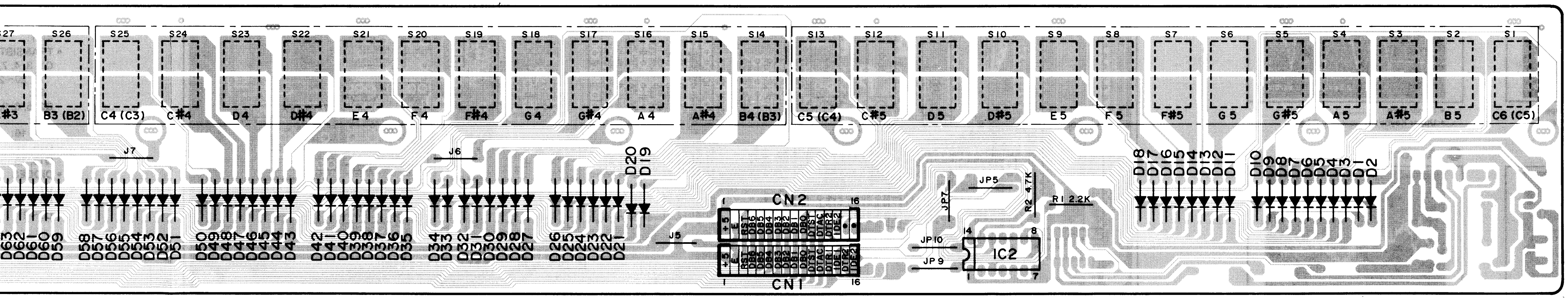
MKB2

SXPG201011


S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
C2 (C1)
C#2
D2
D#2
E2
F2
F#2
G2
G#2
A2
A#2
B2 (B1)
(LOWER KEYBOARD)
UPPER KEYBOARD
J1
J2
J3
CN3
CN4
KF0
KS0
KF1
KS1
KF2
KS2
KF3
KS3
KB03
KB04
KB05

MKB2
NOTES:
- DIODES
  D1~24: MA162A

SXPG200921


S26
S25
S24
S23
S22
S21
S20
S19
S18
S17
S16
S15
S14
S13
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
B3 (B2)
C4 (C3)
C#4
D4
D#4
E4
F4
F#4
G4
G#4
A4
A#4
B4 (B3)
C5 (C4)
C#5
D5
D#5
E5
F5
F#5
G5
G#5
A5
A#5
B5
C6 (C5)
J5
J6
J7
JP5
JP7
JP9
JP10
R2 4.7K
R1 2.2K
IC2
CN2
CN1

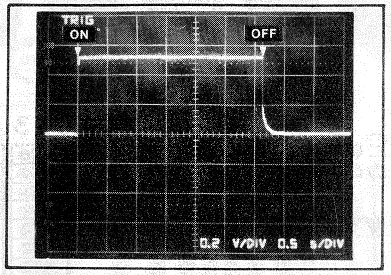
MKB1
NOTES:
- IC'S
  IC1: MN50020PGV
  IC2: MN1231
- DIODES
  D1~74: MA162A

EJ II EFFECT, MIXING & JACK II CIRCUIT BOARD

■ Measuring Conditions

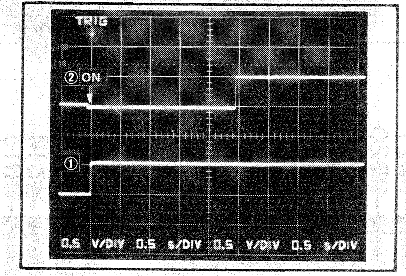
1. Set to the initial mode. (Refer to page I-3)
2. Set the all parts INITIAL TOUCH SENSE function (EFFECT MODE: Page 4) to "0". (Upper=0, Lower=0, Bass=0)
3. Change the unit setting as indicate below the pictures to confirm the waveforms.

❶ SNS



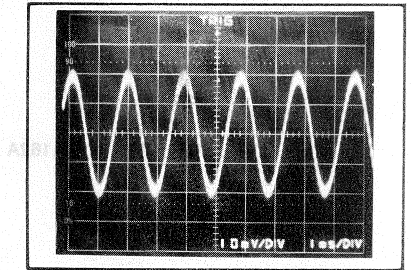
- Power SW .... ON→OFF

❷ Muting Control, ❶ SNS



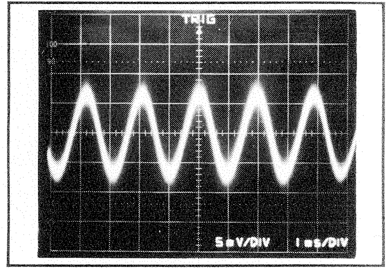
- Power SW .... ON

❸ Upper Tab



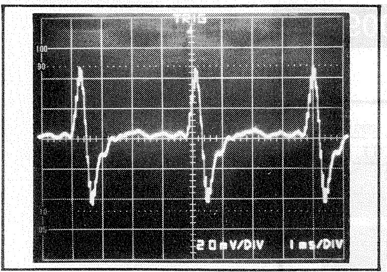
- Upper Tab .... Flute 8′
- Upper Keyboard .... C4 Key

❹ Lower Tab



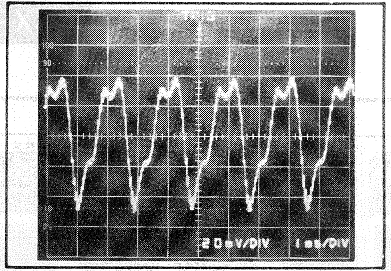
- Lower Tab .... Flute 8′
- Lower Keyboard .... C4 Key

❻ Special



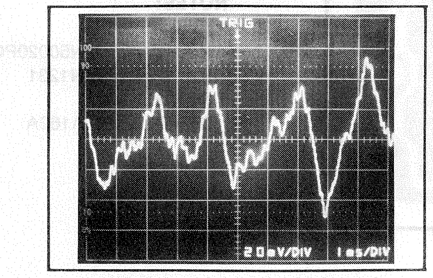
- Upper Special .... Trumpet
- Upper Keyboard .... C4 Key

❼ Solo



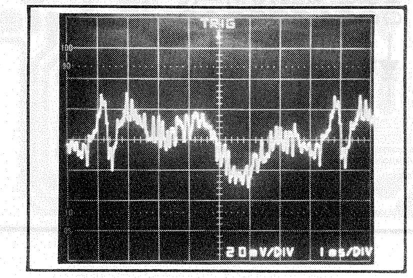
- Upper Solo .... Flute
- Upper Keyboard .... C4 Key

❽ Accomp 2 & 3



- Rhythm .... Hard Rock
- Arranger .... Accomp 2 & 3
- LKB...C Key • Start/Stop...Start

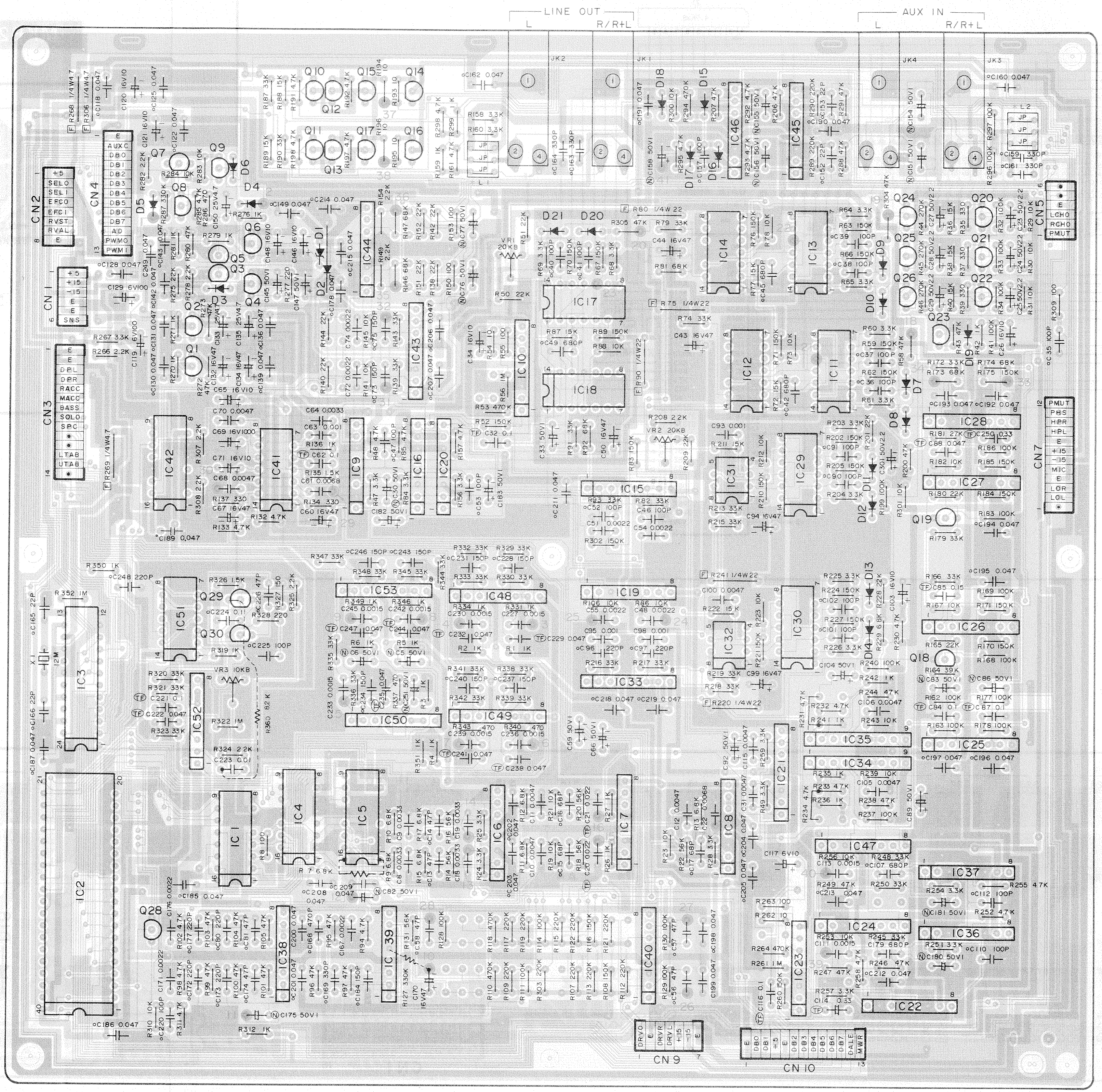
❾ Accomp 1



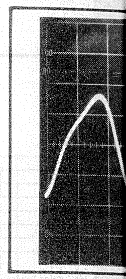
- Rhythm .... Hard Rock
- Arranger .... Accomp 1
- LKB...C Key • Start/Stop...Start

Circuit view on top of P.C.B.

- [EZ] [M] [MC] [XM] [XL] areas **SXPG200431**
- Other areas **SXPG200411**


LINE OUT
L
R/R+L
AUX IN
L
R/R+L
JK1
JK2
JK3
JK4
CN1
CN2
CN3
CN4
CN5
CN7
CN9
CN10
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC34
IC35
IC36
IC37
IC38
IC39
IC40
IC41
IC42
IC43
IC44
IC45
IC46
IC47
IC48
IC49
IC50
IC51
IC52
IC53

❿ Bass

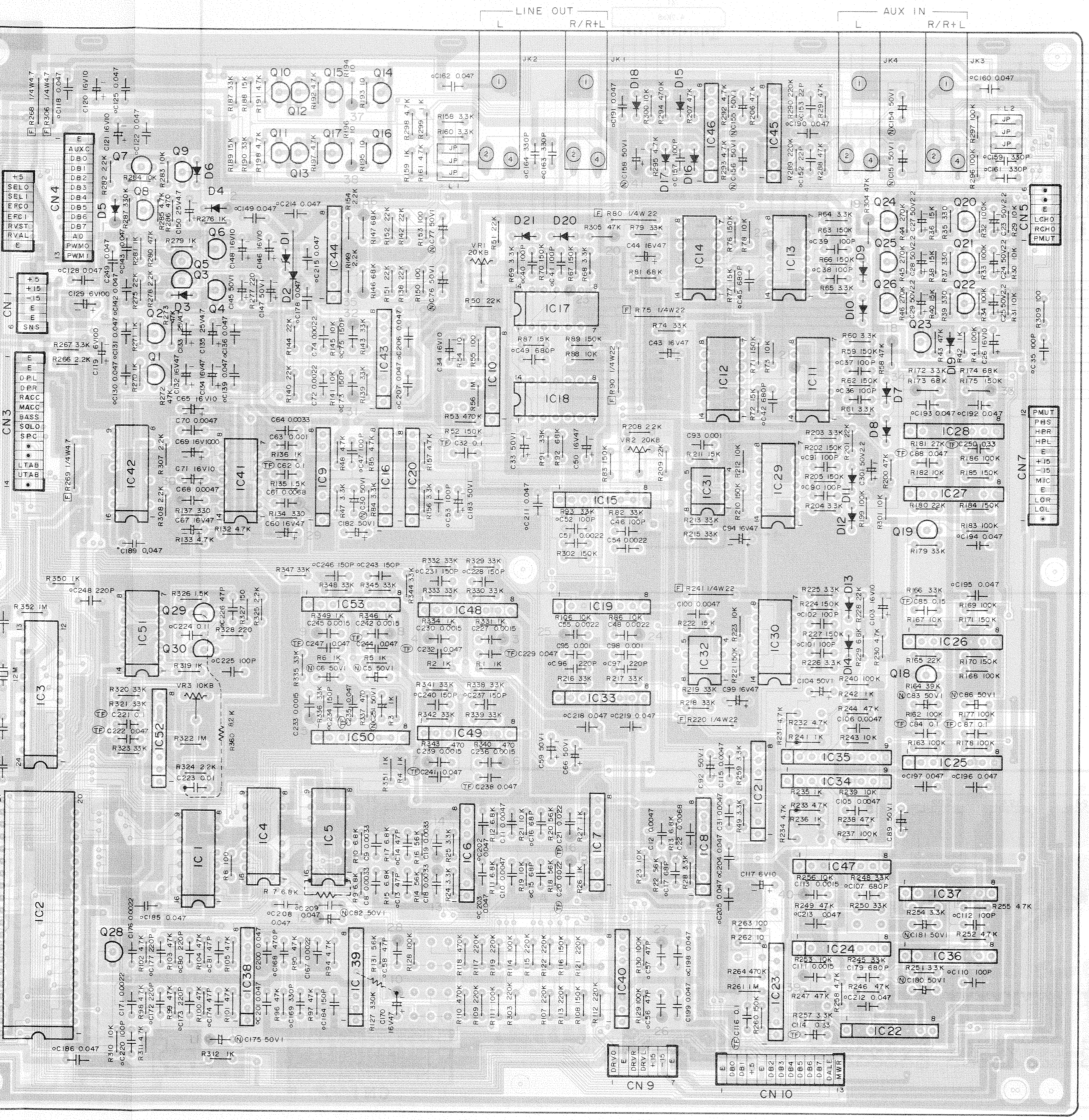


- Bass......
- Pedal Ke

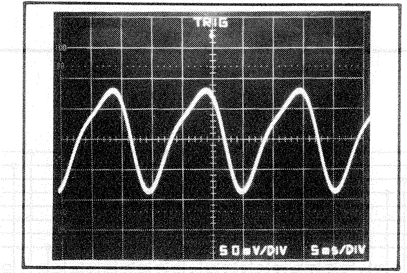
NOTES:
- IC'S
  - IC1:
  - IC2:
  - IC3:
  - IC4, 5, 42:
  - IC6~8, 15,
    24~28, 3
    38~40, 4
    52, 53:
  - IC9, 16, 20,
    37:
  - IC10, 23:
  - IC11, 13, 1
    30:
  - IC12, 14, 1
  - IC31, 32:
  - IC34, 35:
  - IC41:
  - IC51:
- TRANSIST
  - Q1, 3, 4, 7,
    13, 20~2
    30:
  - Q2, 5, 6, 9,
    29:
  - Q14, 16:
  - Q15, 17:
  - Q18, 19:
- DIODES
  - D1:
  - D2:
  - D3~21:

Circuit view on top of P.C.B.

• [EZ] [M] [MC] [XM] [XL] areas **SXPG200431** • Other areas **SXPG200411**

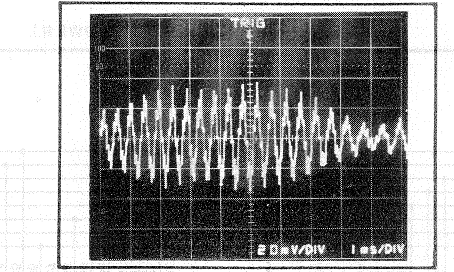


⑩ Bass



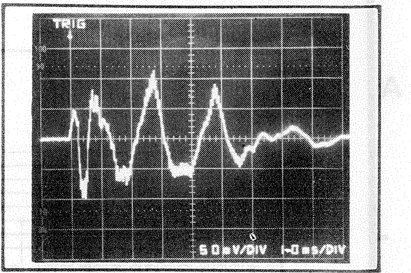
- Bass ....Organ
- Pedal Keyboard ....C2 Key

⑪ Drum Percussion (Rch)



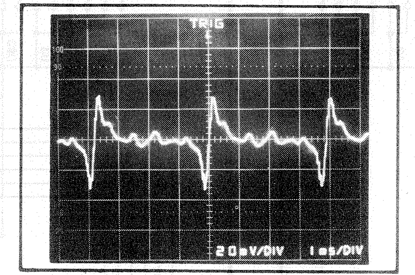
- Keyboard Perc. ....ON
- Lower Keyboard ....Whistle 1

⑫ Drum Percussion (Lch)



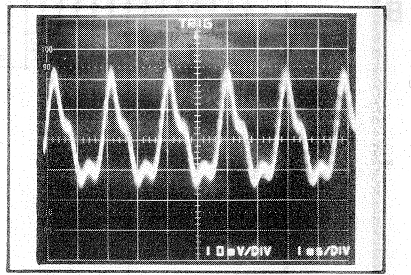
- Keyboard Percussion ....ON
- Lower Keyboard ....Bass Drum 1

⑬



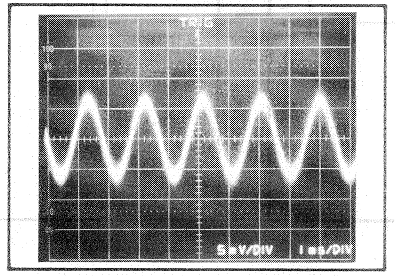
- Upper Poly..........................Trumpet
- Upper Keyboard.................C4 Key

⑭



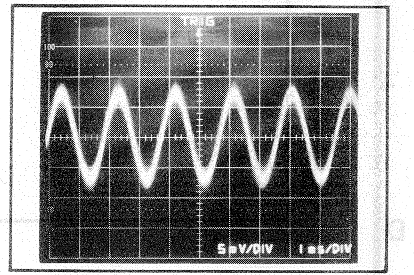
- Upper Solo ....Flute
- Upper Keyboard.................C4 Key

⑮



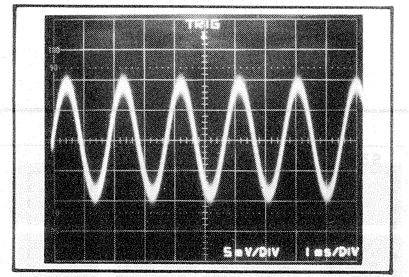
- Upper Tab...........................Flute 8′
- Celeste................................ON
- Upper Keyboard.................C4 Key

⑯



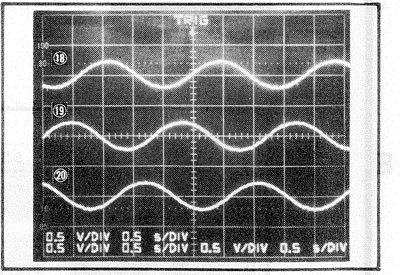
- Upper Tab...........................Flute 8′
- Tremolo ....ON
- Upper Keyboard.................C4 Key

⑰

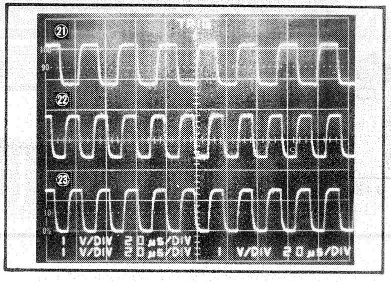


- Upper Tab...........................Flute 8′
- Reverb.................................ON
- Upper Keyboard.................C4 Key

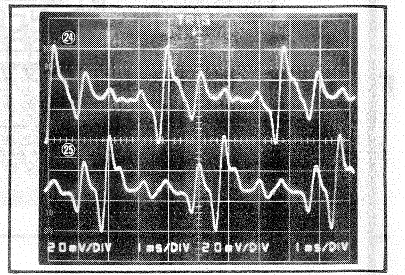
⑱, ⑲, ⑳



㉑, ㉒, ㉓



㉔, ㉕

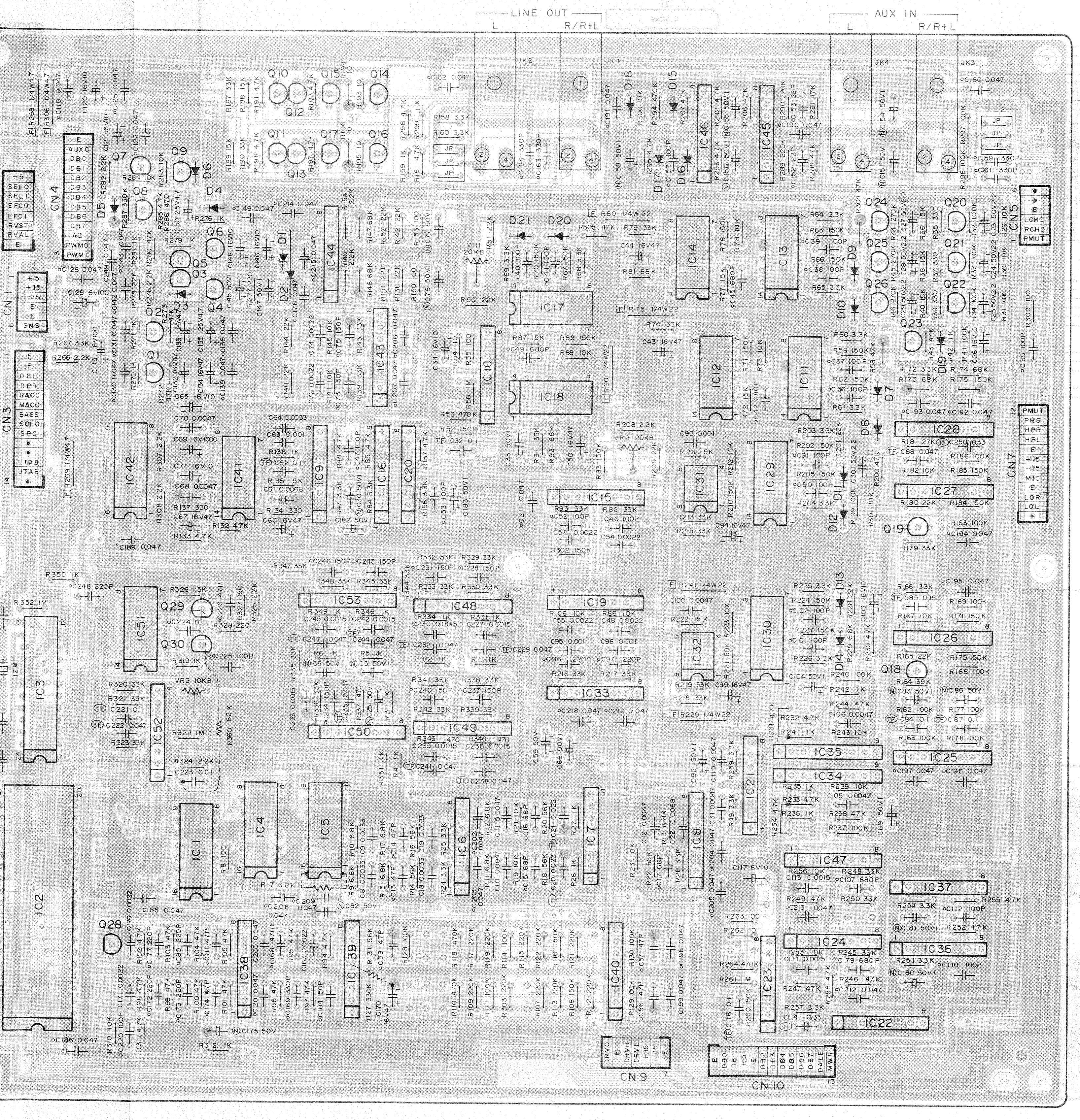


- Upper Poly..........................Trumpet
- Celeste................................ON
- Upper Keyboard.................C4 Key

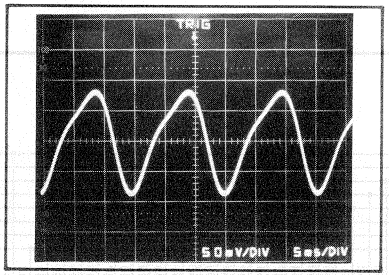
NOTES:

- IC'S
  - IC1: SVIGTC4051BP
  - IC2: SVIG65002018
  - IC3: M66240P
  - IC4, 5, 42: SVIGTC4053BP
  - IC6～8, 15, 19, 21, 24～28, 33, 38～40, 43～50, 52, 53: SVIGM5218L
  - IC9, 16, 20, 22, 36, 37: SVIGUPC1252H
  - IC10, 23: SVIGUPC1253H
  - IC11, 13, 17, 29, 30: SVIGMSM4011
  - IC12, 14, 18: MN3004
  - IC31, 32: MN3006
  - IC34, 35: SVIGBA6110
  - IC41: SVIGLM1894N
  - IC51: SVIGM74H04
- TRANSISTORS
  - Q1, 3, 4, 7, 8, 12, 13, 20～26, 28, 30: 2SC2320LFG
  - Q2, 5, 6, 9, 10, 11, 29: 2SA1015-GR
  - Q14, 16: 2SC3940AR
  - Q15, 17: 2SA1534AR
  - Q18, 19: 2SJ105GR
- DIODES
  - D1: MA4062
  - D2: SVDGRK14S
  - D3～21: MA165TA5

● Circuit view on top of P.C.B. • [EZ] [M] [MC] [XM] [XL] areas **SXPG200431** • Other areas **SXPG200411**

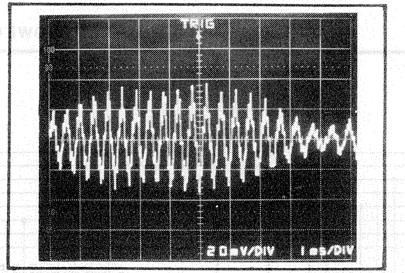

LINE OUT
L
R/R+L
AUX IN
L
R/R+L
JK1
JK2
JK3
JK4
CN1
CN3
CN4
CN5
CN7
CN9
CN10
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC34
IC35
IC36
IC37
IC38
IC39
IC40
IC41
IC42
IC43
IC44
IC45
IC46
IC47
IC48
IC49
IC50
IC51
IC52
IC53
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
Q20
Q21
Q22
Q23
Q24
Q25
Q26
Q28
Q29
Q30
VR1
VR2
VR3
PMUT
LCHO
RCHO
DRVO
E
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DALE
MWR

⑩ Bass



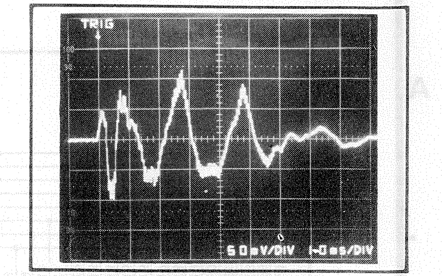
- Bass..............................Organ
- Pedal Keyboard.................C2 Key

⑪ Drum Percussion (Rch)



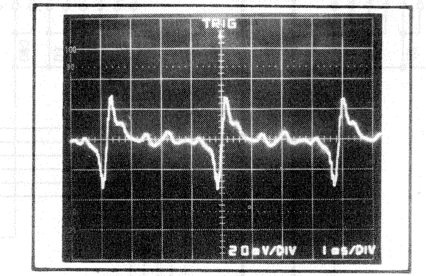
- Keyboard Perc. ....ON
- Lower Keyboard ....Whistle 1

⑫ Drum Percussion (Lch)



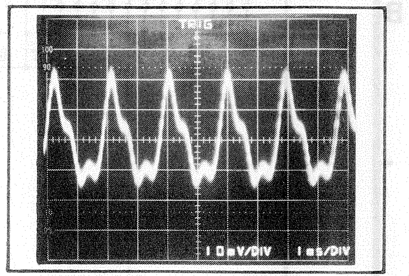
- Keyboard Percussion ....ON
- Lower Keyboard ....Bass Drum 1

⑬



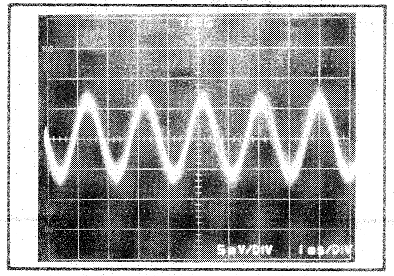
- Upper Poly..........................Trumpet
- Upper Keyboard.................C4 Key

⑭



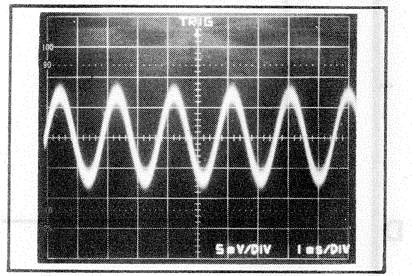
- Upper Solo ....Flute
- Upper Keyboard.................C4 Key

⑮



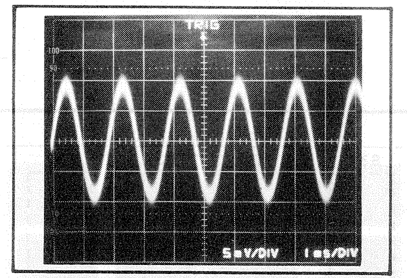
- Upper Tab...........................Flute 8′
- Celeste................................ON
- Upper Keyboard.................C4 Key

⑯



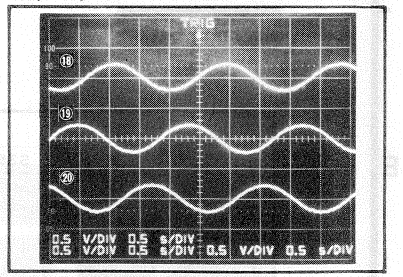
- Upper Tab...........................Flute 8′
- Tremolo ....ON
- Upper Keyboard.................C4 Key

⑰

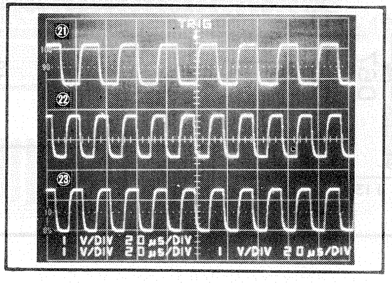


- Upper Tab...........................Flute 8′
- Reverb.................................ON
- Upper Keyboard.................C4 Key

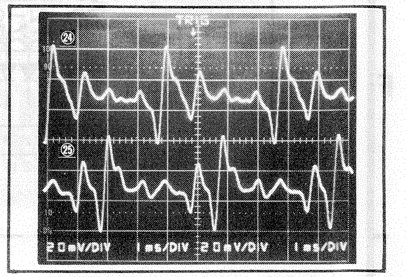
⑱, ⑲, ⑳



㉑, ㉒, ㉓



㉔, ㉕



- Upper Poly..........................Trumpet
- Celeste................................ON
- Upper Keyboard.................C4 Key

NOTES:

- IC'S

IC1:	SVIGTC4051BP
IC2:	SVIG65002018
IC3:	M66240P
IC4, 5, 42:	SVIGTC4053BP
IC6～8, 15, 19, 21, 24～28, 33, 38～40, 43～50, 52, 53:	SVIGM5218L
IC9, 16, 20, 22, 36, 37:	SVIGUPC1252H
IC10, 23:	SVIGUPC1253H
IC11, 13, 17, 29, 30:	SVIGMSM4011
IC12, 14, 18:	MN3004
IC31, 32:	MN3006
IC34, 35:	SVIGBA6110
IC41:	SVIGLM1894N
IC51:	SVIGM74H04

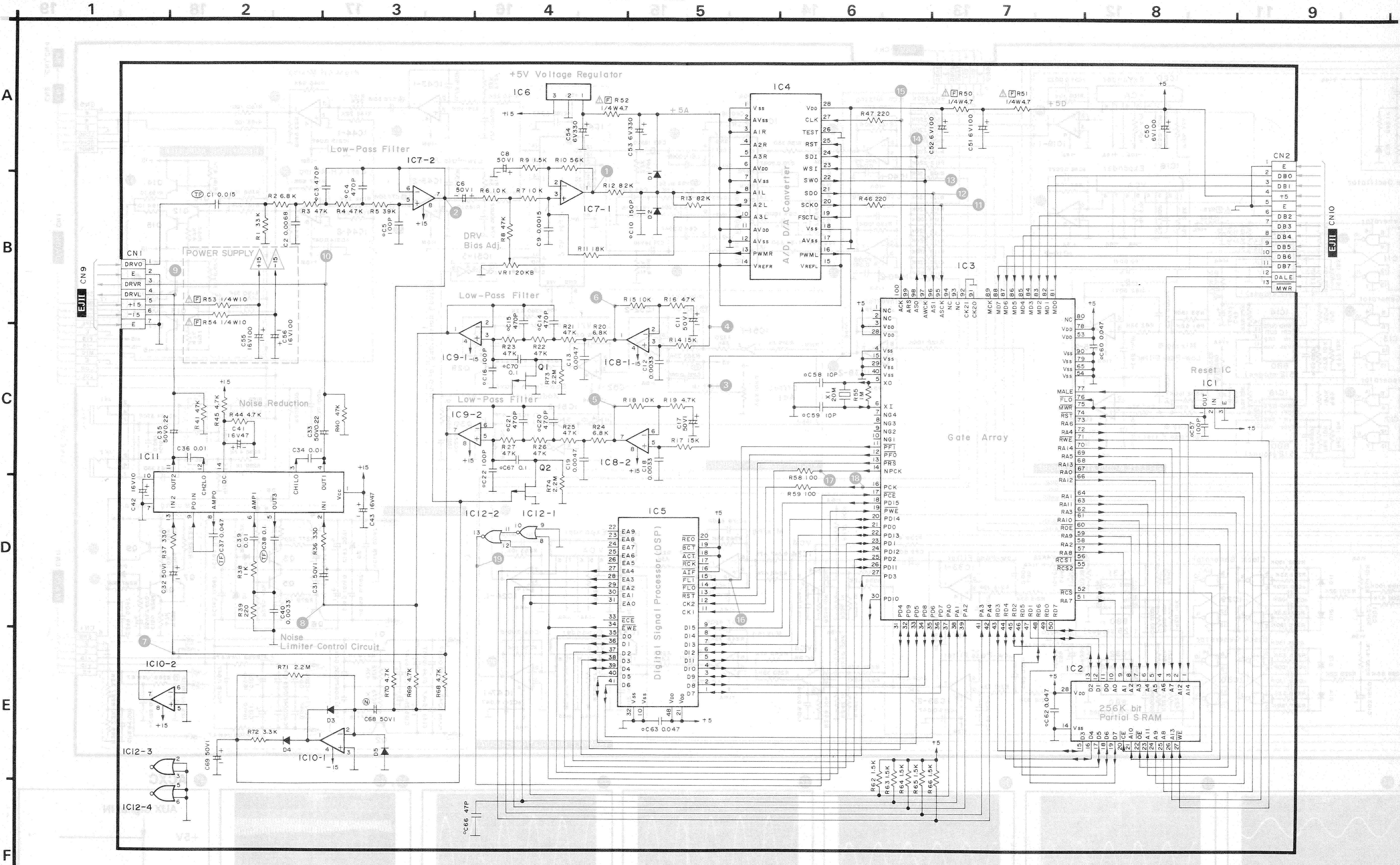
- TRANSISTORS

Q1, 3, 4, 7, 8, 12, 13, 20～26, 28, 30:	2SC2320LFG
Q2, 5, 6, 9, 10, 11, 29:	2SA1015-GR
Q14, 16:	2SC3940AR
Q15, 17:	2SA1534AR
Q18, 19:	2SJ105GR

- DIODES

D1:	MA4062
D2:	SVDGRK14S
D3～21:	MA165TA5

DIGITAL REVERB CIRCUIT DIAGRAM

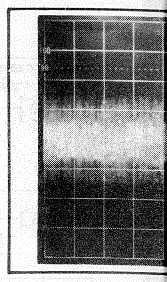

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
+5V Voltage Regulator
IC6
R52 1/4W4.7
C54 6V330
C53 6V330
+5A
IC4
A/D, D/A Converter
Vss
AVss
A1R
A2R
A3R
AVDD
A1L
A2L
A3L
PWMR
VREFR
VDD
CLK
TEST
RST
SDI
WSI
SWO
SDO
SCKO
FSCTL
PWML
VREFL
R47 220
R46 220
R50 1/4W4.7
R51 1/4W4.7
+5D
C52 6V100
C51 6V100
C50 6V100
CN2
CN10
EJ11
E
DB0
DB1
+5
DB2
DB3
DB4
DB5
DB6
DB7
DALE
MWR
Low-Pass Filter
IC7-2
IC7-1
C8 50V1
R9 1.5K
R10 56K
R12 82K
R13 82K
R11 18K
C6 50V1
R6 10K
R7 10K
C10 150P
C9 0.0015
D1
D2
TF C1 0.015
R2 6.8K
C3 470P
C4 470P
R3 47K
R4 47K
R5 39K
C5 100P
R1 3.3K
C2 0.0068
DRV Bias Adj.
R8 4.7K
VR1 20KB
CN1
CN9
DRVO
E
DRVR
DRVL
+15
-15
POWER SUPPLY
R53 1/4W10
R54 1/4W10
C55 16V100
C56 16V100
IC3
Gate Array
Low-Pass Filter
IC9-1
IC8-1
R15 10K
R16 47K
C11 50V1
R14 15K
C12 0.0033
C15 470P
C14 470P
R21 47K
R20 6.8K
R23 47K
R22 47K
C16 100P
C70 0.1
Q1
R73 2.2M
C13 0.0047
C58 10P
X1 20M
R55 1M
C59 10P
Reset IC
IC1
OUT
IN
E
C57 100P
C60 0.047
Noise Reduction
R41 47K
R45 4.7K
R44 4.7K
C41 16V47
C35 50V0.22
C33 50V0.22
R40 47K
C36 0.01
C34 0.01
IC11
C42 16V10
C43 16V47
IN2
OUT2
P01N
CH2LO
AMP0
DC
AMP1
OUT3
CH1LO
OUT1
IN1
Vcc
R37 330
R36 330
C32 50V1
C31 50V1
C39 0.01
C38 0.1
C37 0.047
R38 1K
R39 220
C40 0.0033
Noise Limiter Control Circuit
IC9-2
IC8-2
R18 10K
R19 4.7K
C17 50V1
R17 15K
C18 0.0033
C21 470P
C20 470P
R25 47K
R24 6.8K
R27 47K
R26 47K
C22 100P
C67 0.1
Q2
R74 2.2M
C19 0.0047
R58 100
R59 100
IC12-2
IC12-1
IC5
Digital Signal Processor (DSP)
EA9
EA8
EA7
EA6
EA5
EA4
EA3
EA2
EA1
EA0
ECE
EWE
D0
D1
D2
D3
D4
D5
D6
REO
BCT
ACT
RCK
AIF
FLI
FLO
RST
CK2
CK1
DI5
DI4
DI3
DI2
DI1
DI0
D9
D8
D7
C63 0.047
IC10-2
IC10-1
R71 2.2M
R72 3.3K
D3
D4
D5
C68 50V1
C69 50V1
R70 4.7K
R69 4.7K
R68 4.7K
IC12-3
IC12-4
C66 47P
IC2
256K bit Partial S RAM
C62 0.047
R62 1.5K
R63 1.5K
R64 1.5K
R65 1.5K
R66 1.5K
R67 1.5K
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
⑮
⑯
⑰
⑱
⑲

NOTES:

- IC'S

IC1:	MN1280R	IC8~10:	SVIGM5218L
IC2:	SVIGHM65256	IC11:	SVIGLM1894N
IC3:	SVIGMB622416	IC12:	MN74HC02S
IC4:	MN8305S	• TRANSISTORS	
IC5:	SVIG87064073	Q1, 2:	2SJ105GR
IC6:	SVIGM5278L05	• DIODES	
IC7:	SVIGM5220L	D1~5:	MA165TA5

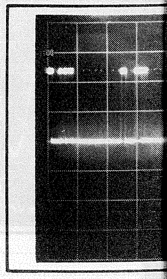
❶



■ Measu

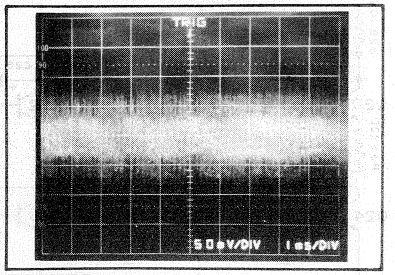
1. Set t
2. Set t
(EFF
Lowe
3. Set t
• Upp
• Upp
• Rev
• Effe
• Rev
• TYP
• Upp

⑭

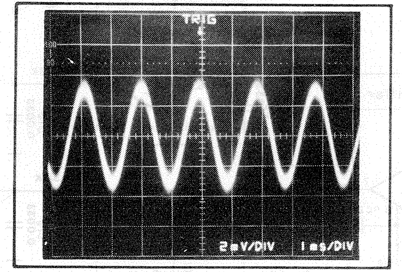


DRV DIGITAL REVERB CIRCUIT BOARD

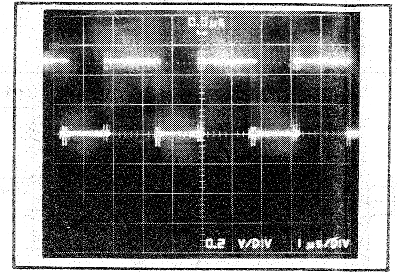
❶



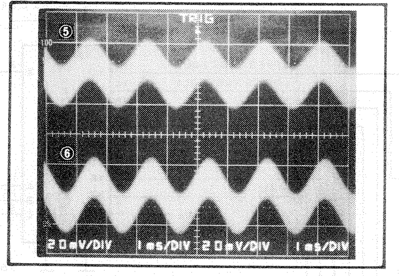
❷



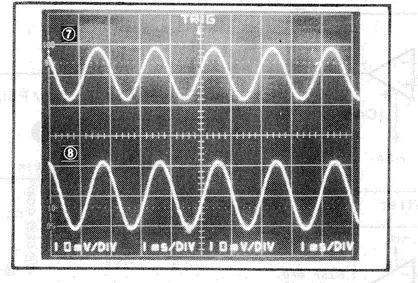
❸, ❹



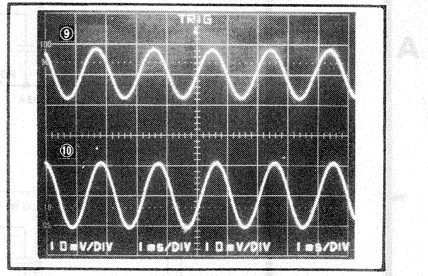
❺, ❻



❼, ❽



❾, ❿



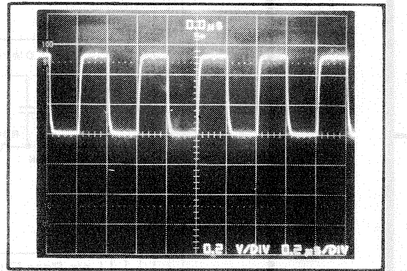
Circuit view on top of P.C.B.

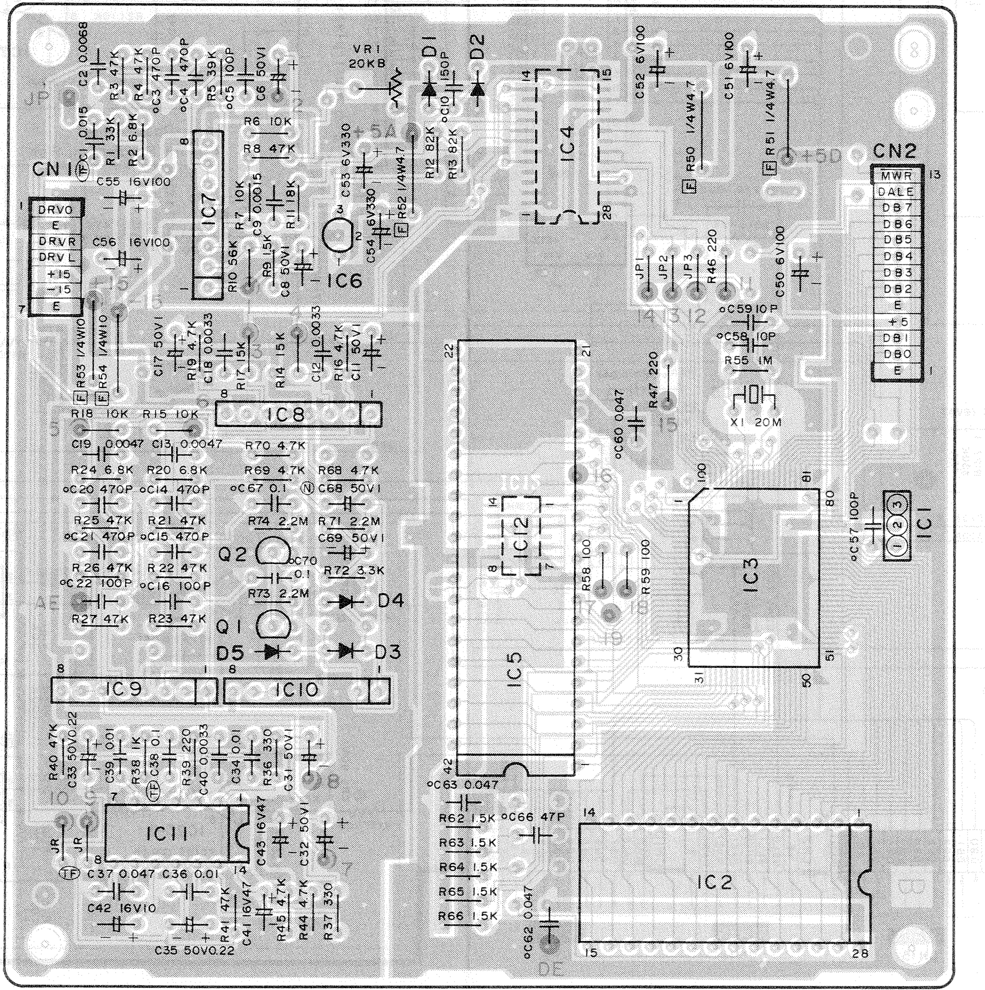
SXPG146021

■ Measuring Conditions

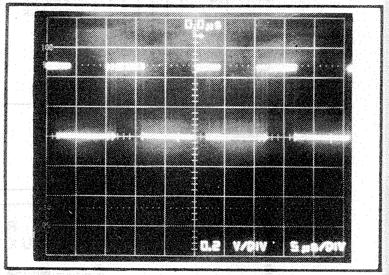
1. Set to the initial mode. (Refer to page I-3)
2. Set the all parts INITIAL TOUCH SENSE function (EFFECT MODE: Page 4) to "0". (Upper=0, Lower=0, Bass=0)
3. Set the unit as follows.
   - Upper Orchestral Conductor..........Tab & Organ
   - Upper Tab & Organ..........Flute 8′
   - Reverb (Upper Tab)..........ON
   - Effect..........Page 1
   - Reverb Depth..........“8”
   - TYPE..........HALL
   - Upper Keyboard..........C4 Key

⓫




CN1
DRVO
E
DRVR
DRV L
+15
−15
E
CN2
MWR
DALE
DB7
DB6
DB5
DB4
DB3
DB2
E
+5
DB1
DB0
E
VR1 20KB
D1
D2
D3
D4
D5
Q1
Q2
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
X1 20M
JP1
JP2
JP3
+5A
+5D

⓬



NOTES:

- IC'S

IC1:	MN1280R
IC2:	SVIGHM65256
IC3:	SVIGM622416
IC4:	MN8305S
IC5:	SVIG87064073
IC6:	SVIGM5278L05
IC7:	SVIGM5220L
IC8～10:	SVIGM5218L
IC11:	SVIGLM1894N
IC12:	MN74HC02S

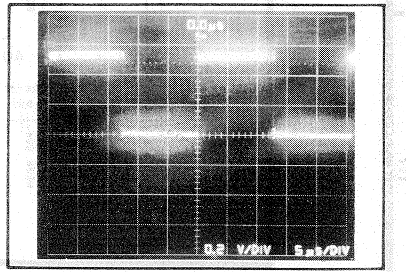
- TRANSISTORS

Q1, 2:	2SJ105GR

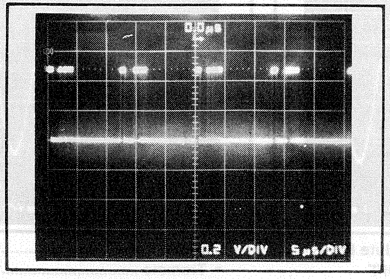
- DIODES

D1～5:	MA165TA5

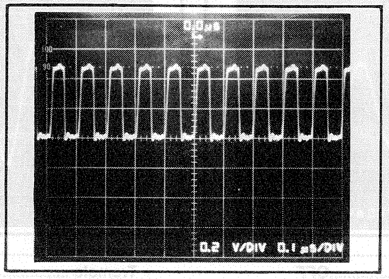
⓭



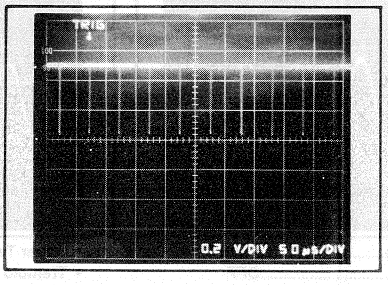
⓮



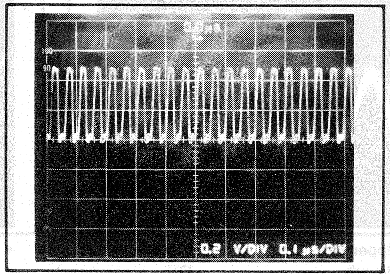
⓯



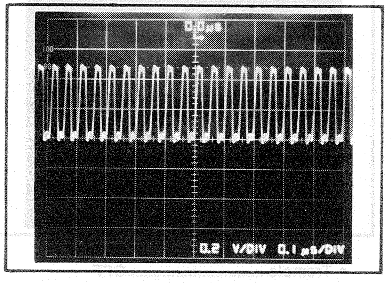
⓰



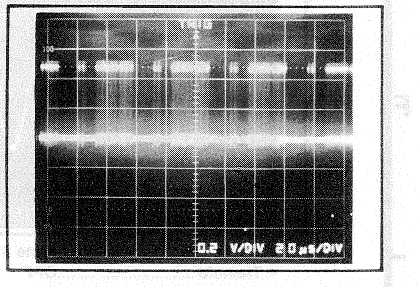
⓱



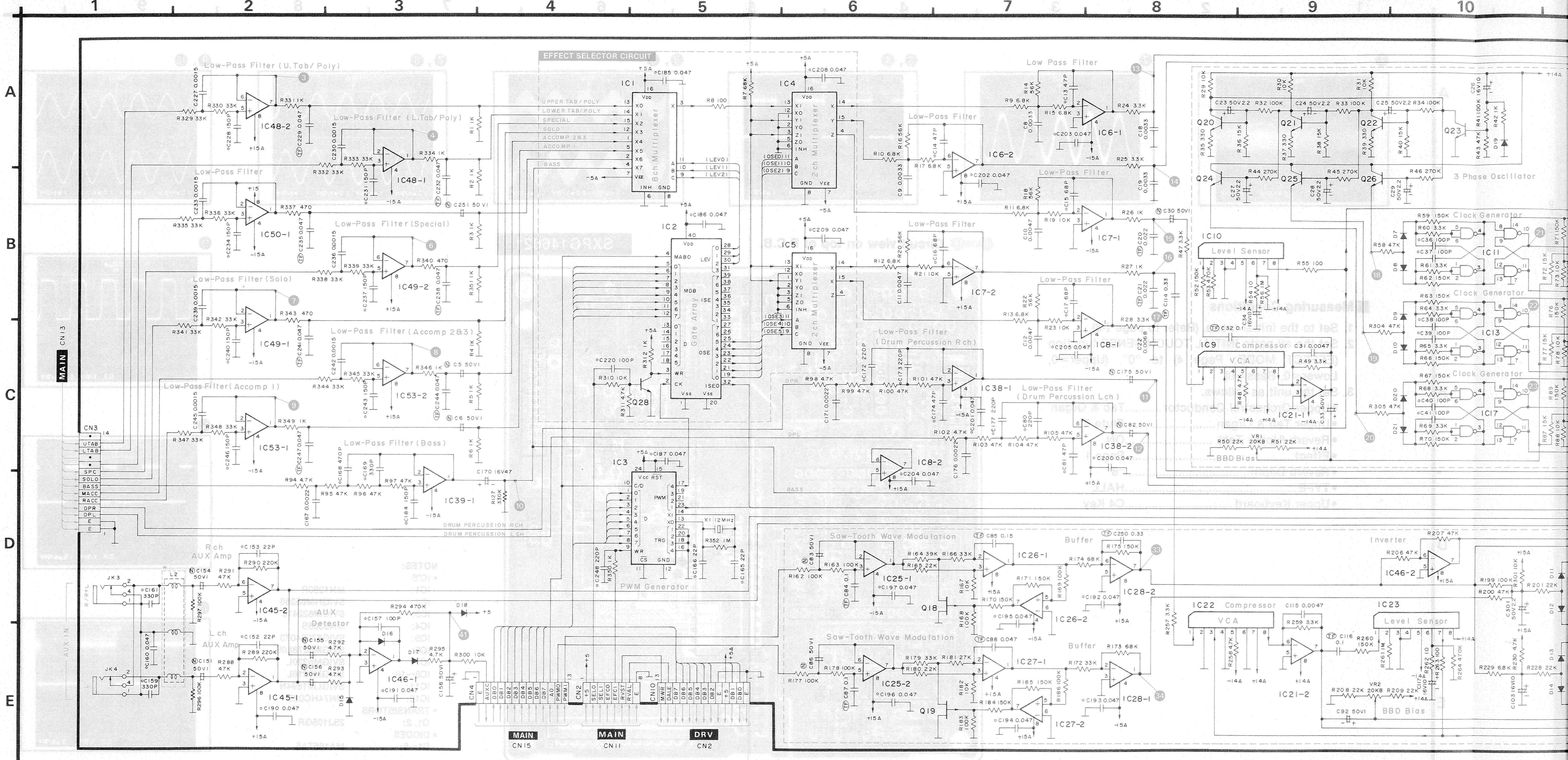
⓲



⓳



EJ II EFFECT, MIXING & JACK II CIRCUIT DIAGRAM


1
2
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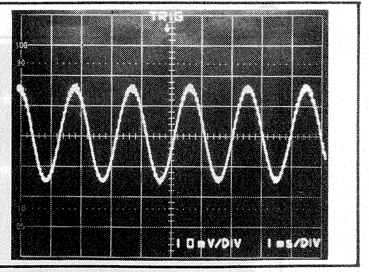
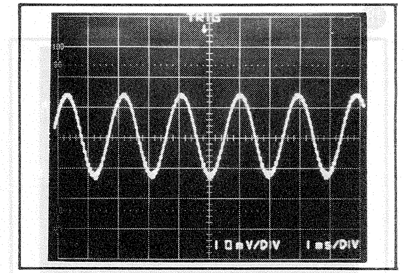
5
6
7
8
9
10
A
B
C
D
E
F
EFFECT SELECTOR CIRCUIT
Low-Pass Filter (U.Tab/Poly)
Low-Pass Filter (L.Tab/Poly)
Low-Pass Filter
Low-Pass Filter (Special)
Low-Pass Filter (Solo)
Low-Pass Filter (Accomp 2&3)
Low-Pass Filter (Accomp 1)
Low-Pass Filter (Bass)
Low Pass Filter
Low-Pass Filter (Drum Percussion Rch)
Low-Pass Filter (Drum Percussion Lch)
8ch Multiplexer
2ch Multiplexer
Gate Array
PWM Generator
IC1
IC2
IC3
IC4
IC5
IC48-2
IC48-1
IC50-1
IC49-2
IC49-1
IC53-2
IC53-1
IC39-1
IC6-1
IC6-2
IC7-1
IC7-2
IC8-1
IC8-2
IC38-1
IC38-2
IC45-2
IC45-1
IC46-1
IC46-2
IC25-1
IC25-2
IC26-1
IC26-2
IC27-1
IC27-2
IC28-1
IC28-2
IC9
IC10
IC11
IC13
IC17
IC21-1
IC21-2
IC22
IC23
Q18
Q19
Q20
Q21
Q22
Q23
Q24
Q25
Q26
Q28
Level Sensor
Compressor
VCA
BBD Bias
3 Phase Oscillator
Clock Generator
Inverter
Buffer
Saw-Tooth Wave Modulation
Rch AUX Amp
Lch AUX Amp
AUX Detector
AUX IN
JK3
JK4
L2
X1 12MHz
UPPER TAB/POLY
LOWER TAB/POLY
SPECIAL
SOLO
ACCOMP 2&3
ACCOMP 1
BASS
DRUM PERCUSSION RCH
DRUM PERCUSSION LCH
CN3
MAIN CN13
UTAB
LTAB
SPC
SOLO
BASS
MACC
RACC
DPR
DPL
E
CN4
CN2
CN10
MAIN CN15
MAIN CN11
DRV CN2
+5A
-5A
+15A
-15A
+14A
-14A

㉖



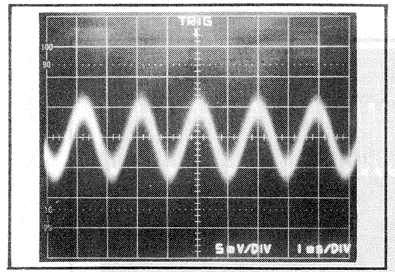
- Upper Tab..........................Flute 8′
- Tremolo..............................OFF
- Upper Keyboard.................C4 Key

㉗



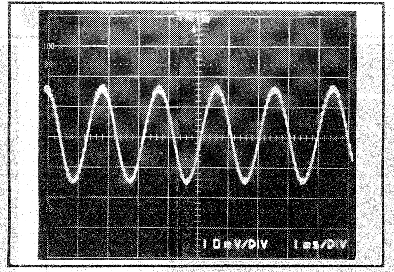
- Upper Tab..........................Flute 8′
- Tremolo..............................OFF
- Upper Keyboard.................C4 Key

㉘



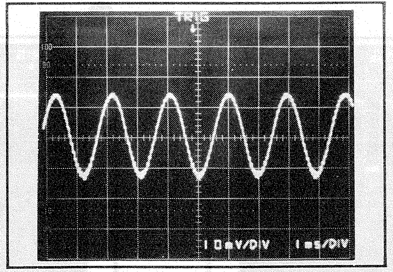
- Upper Tab..........................Flute 8′
- Reverb...............................ON
- Upper Keyboard.................C4 Key

㉙



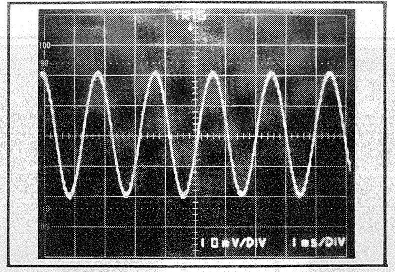
- Upper Tab..........................Flute 8′
- Tremolo..............................OFF
- Upper Keyboard.................C4 Key

㉚



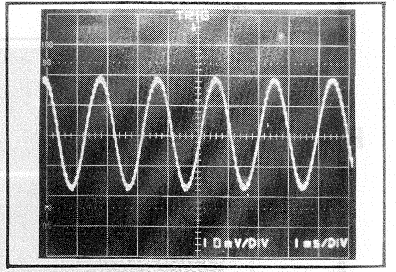
- Upper Tab..........................Flute 8′
- Tremolo..............................OFF
- Upper Keyboard.................C4 Key

㉛



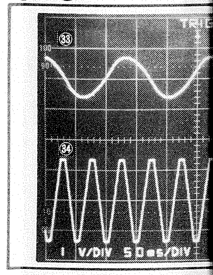
- Upper Tab..........................Flute 8′
- Tremolo..............................OFF
- EXP, Main Vol....................Max
- Upper Keyboard.................C4 Key

㉜

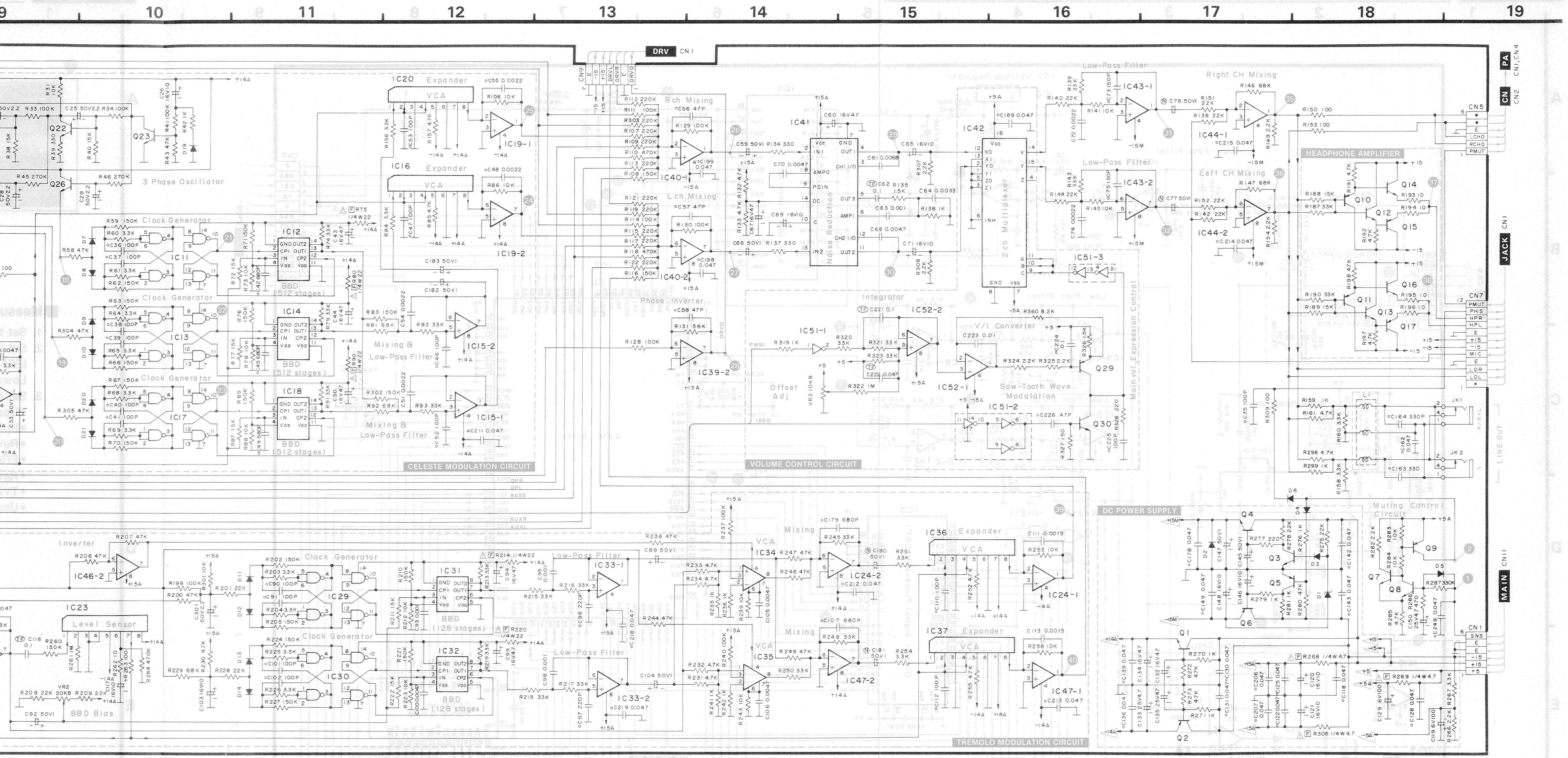


- Upper Tab..........................Flute 8′
- Tremolo..............................OFF
- EXP, Main Vol....................Max
- Upper Keyboard.................C4 Key

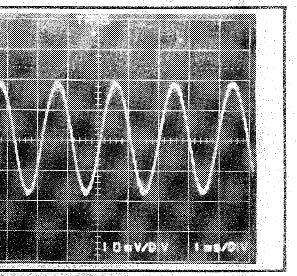
㉝, ㉞



- Tremolo

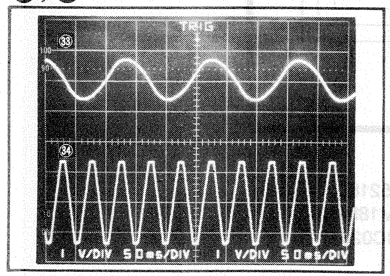


10
11
12
13
14
15
16
17
18
19
DRV CN1
IC20 Expander
VCA
IC16 Expander
IC19-1
IC19-2
3 Phase Oscillator
Clock Generator
IC11
IC12
BBD (512 stages)
IC13
IC14
IC15-2
Mixing & Low-Pass Filter
IC17
IC18
IC15-1
CELESTE MODULATION CIRCUIT
Rch Mixing
IC40-1
Lch Mixing
IC40-2
Phase Inverter
IC39-2
IC41
Noise Reduction
IC42
2ch Multiplexer
Low-Pass Filter
IC43-1
IC43-2
Right CH Mixing
IC44-1
Left CH Mixing
IC44-2
HEADPHONE AMPLIFIER
Q10
Q12
Q14
Q15
Q11
Q13
Q16
Q17
Integrator
IC52-2
IC51-1
V/I Converter
IC52-1
Offset Adj
Saw-Tooth Wave Modulation
IC51-2
IC51-3
Q29
Q30
Main vol. Expression Control
VOLUME CONTROL CIRCUIT
PA CN1,CN4
CN CN2
CN5
JACK CN1
CN7
JK1
JK2
LINE OUT
DC POWER SUPPLY
Muting Control Circuit
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
MAIN CN11
Inverter
IC46-2
IC23
Level Sensor
BBD Bias
IC29
IC31
BBD (128 stages)
IC30
IC32
IC33-1
IC33-2
Low-Pass Filter
IC34
IC35
Mixing
IC24-2
IC47-2
IC36 Expander
IC37 Expander
IC24-1
IC47-1
TREMOLO MODULATION CIRCUIT



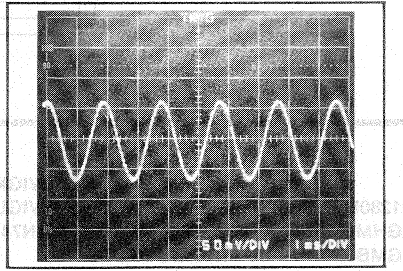
- Tab............................Flute 8'
- lo...............................OFF
- Main Vol.......................Max
- Keyboard.....................C4 Key

㉝, ㉞



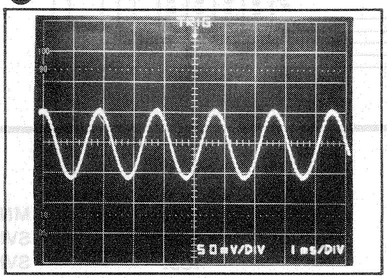
- Tremolo ....Fast

㉟



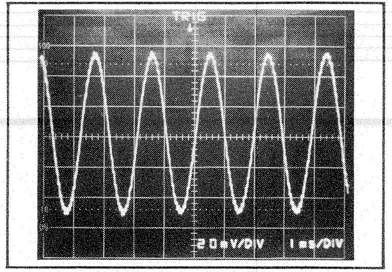
- Upper Tab............................Flute 8'
- Tremolo ....OFF
- EXP, Main Vol.......................Max
- Upper Keyboard....................C4 Key

㊱



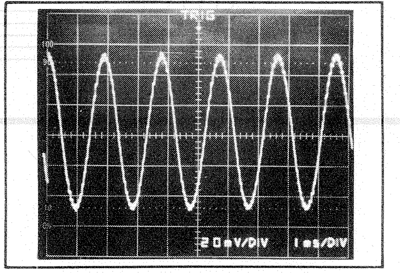
- Upper Tab............................Flute 8'
- Tremolo ....OFF
- EXP, Main Vol.......................Max
- Upper Keyboard....................C4 Key

㊲



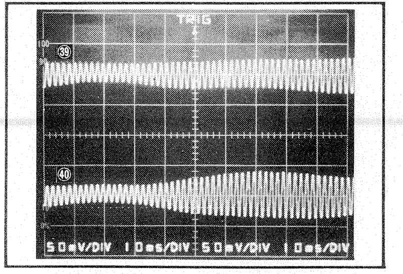
- Upper Tab............................Flute 8'
- Tremolo...OFF • UKB...C4 Key
- EXP, Main Vol.......................Max

㊳



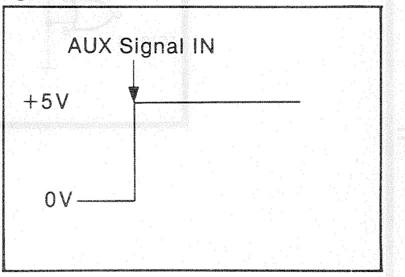
- Upper Tab............................Flute 8'
- Tremolo...OFF • UKB...C4 Key
- EXP, Main Vol.......................Max

㊴, ㊵



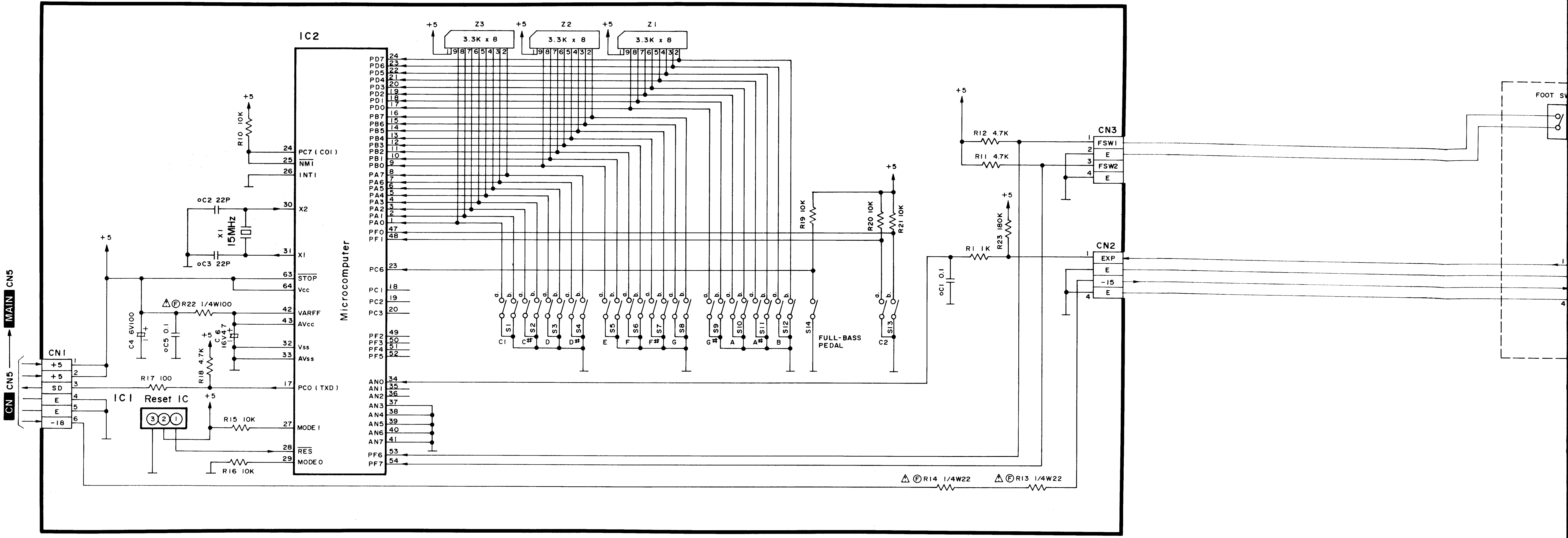
- Upper Tab............................Flute 8'
- Tremolo ....ON (SLOW)
- Upper Keyboard....................C4 Key

㊶ **ACXC**



AUX Signal IN
+5V
0V

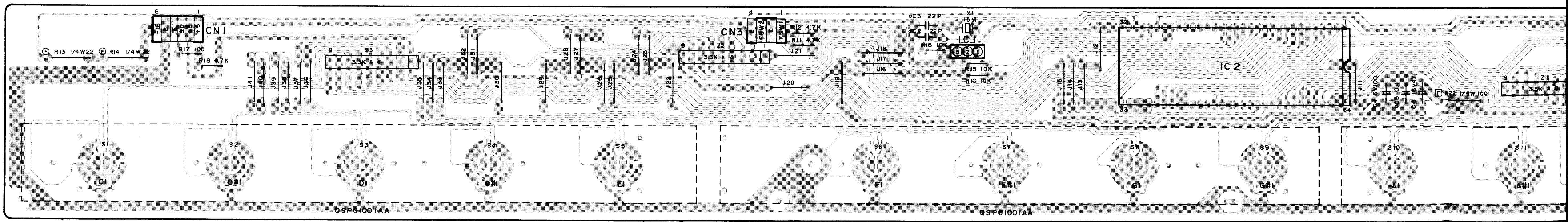
PEDAL KEYBOARD CIRCUIT DIAGRAM


IC2
Microcomputer
Z3 3.3K x 8
Z2 3.3K x 8
Z1 3.3K x 8
+5
R10 10K
PC7 (COI)
NMI
INTI
X2
X1
oC2 22P
oC3 22P
X1 15MHz
STOP
Vcc
VARFF
AVcc
Vss
AVss
PC0 (TXD)
MODE 1
RES
MODE 0
R22 1/4W100
C4 6V100
oC5 0.1
C6 16V47
R18 4.7K
R17 100
R15 10K
R16 10K
IC1 Reset IC
CN1
+5
+5
SD
E
E
-18
MAIN CN5
CN CN5
PD7 PD6 PD5 PD4 PD3 PD2 PD1 PD0
PB7 PB6 PB5 PB4 PB3 PB2 PB1 PB0
PA7 PA6 PA5 PA4 PA3 PA2 PA1 PA0
PF0 PF1
PC6
PC1 PC2 PC3
PF2 PF3 PF4 PF5
AN0 AN1 AN2 AN3 AN4 AN5 AN6 AN7
PF6 PF7
S1 C1
S2 C#
S3 D
S4 D#
S5 E
S6 F
S7 F#
S8 G
S9 G#
S10 A
S11 A#
S12 B
S14 FULL-BASS PEDAL
S13 C2
R19 10K
R20 10K
R21 10K
R23 180K
R1 1K
oC1 0.1
R12 4.7K
R11 4.7K
CN3
FSW1
E
FSW2
E
CN2
EXP
E
-15
E
R14 1/4W22
R13 1/4W22
FOOT SW

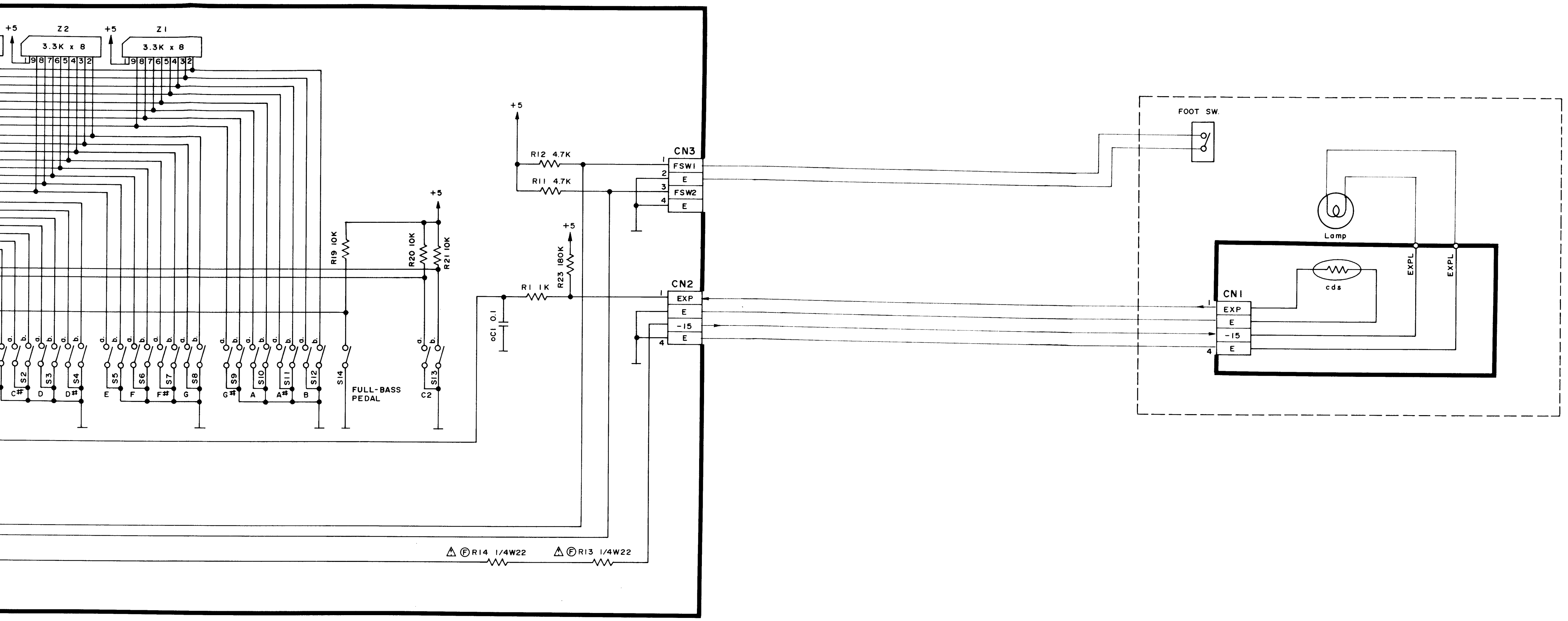
NOTES:
- IC'S

IC1:	MN1280R
IC2:	D78C11AWF03

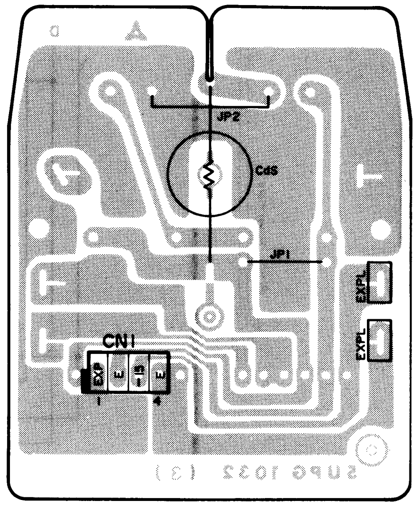
PEDAL KEYBOARD CIRCUIT BOARD


CN1
R13 1/4W22
R14 1/4W22
R17 100
R18 4.7K
Z3 3.3K x 8
CN3
R12 4.7K
R11 4.7K
Z2 3.3K x 8
oC3 22P
oC2 22P
X1 15M
IC1
R16 10K
R15 10K
R10 10K
IC2
C4 6V100
oC5 0.1
C6 16V47
R22 1/4W100
Z1 3.3K x 8
S1 C1
S2 C#1
S3 D1
S4 D#1
S5 E1
S6 F1
S7 F#1
S8 G1
S9 G#1
S10 A1
S11 A#1
QSPG1001AA
QSPG1001AA

EXP EXPRESSION CIRCUIT


+5
Z2
3.3K x 8
Z1
3.3K x 8
9 8 7 6 5 4 3 2
+5
R12 4.7K
R11 4.7K
CN3
FSW1
E
FSW2
E
R19 10K
R20 10K
R21 10K
+5
R23 180K
R1 1K
oC1 0.1
CN2
EXP
E
-15
E
S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12
C# D D# E F F# G G# A A# B
S14
FULL-BASS PEDAL
S13
C2
Ⓕ R14 1/4W22
Ⓕ R13 1/4W22
FOOT SW.
Lamp
cds
CN1
EXP
E
-15
E
EXPL
EXPL

SXPG103211

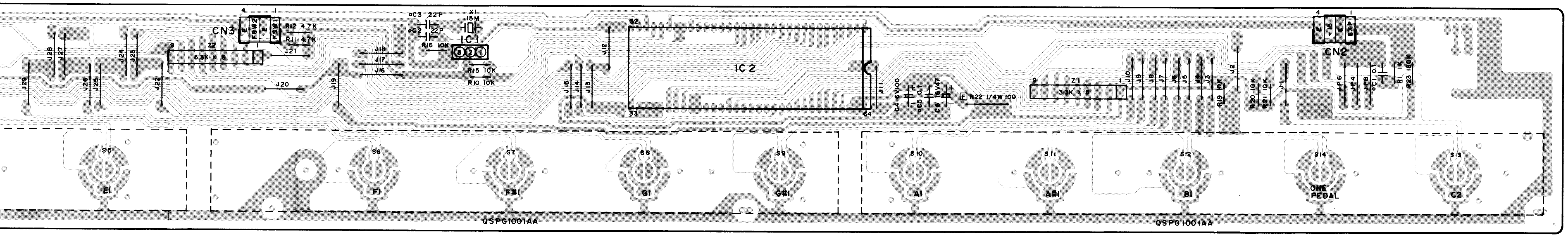

JP2
CdS
JP1
CN1
EXP
E
-15
E
EXPL
EXPL
SUPG 1032 (3)

NOTES:
- IC'S

IC1: MN1280R
IC2: D78C11AWF03

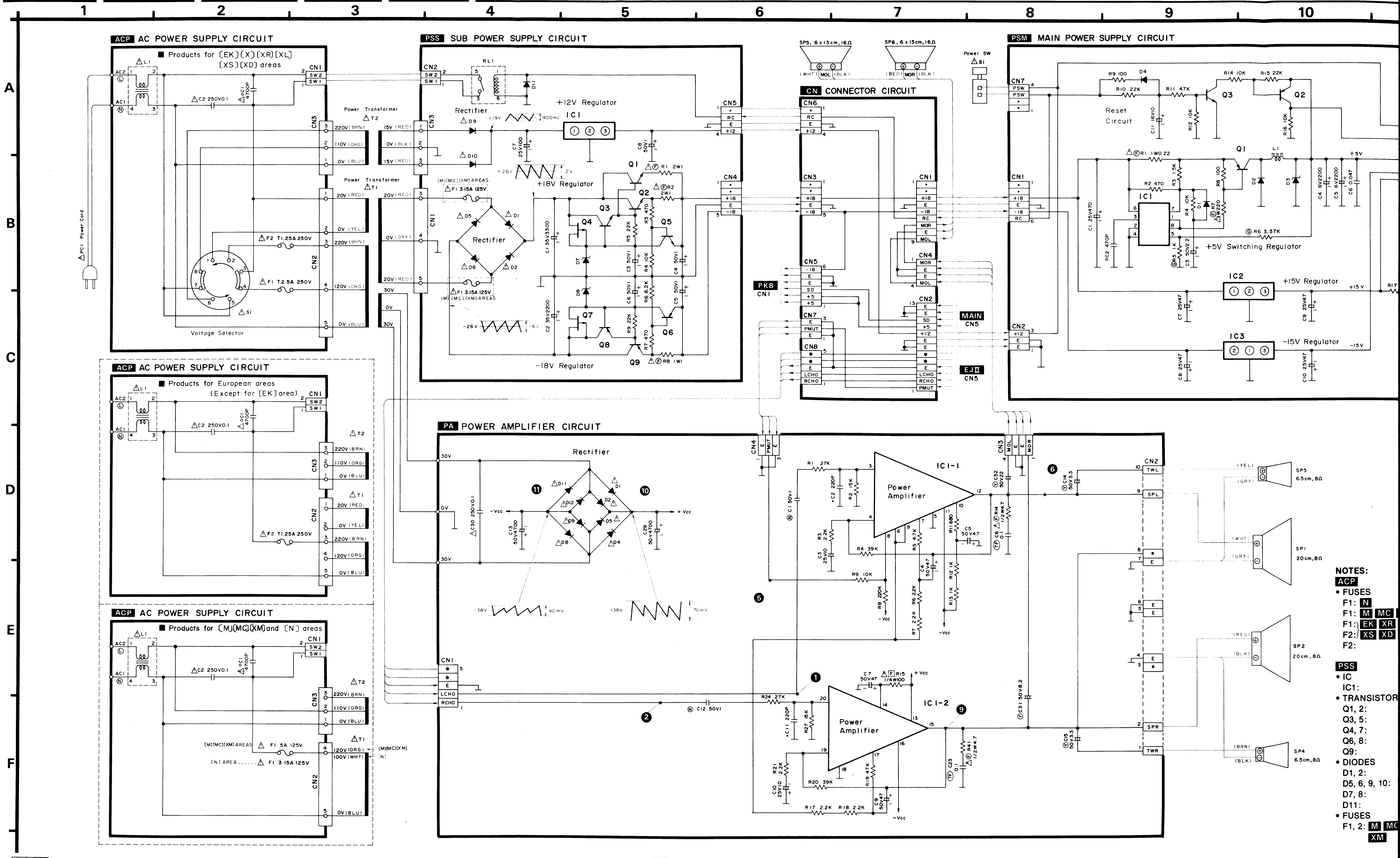
D

SXPG201211


CN3
FSW2
FSW1
E
R12 4.7K
R11 4.7K
J21
Z2
3.3K x 8
oC3 22P
oC2 22P
X1 15M
R16 10K
IC1
R15 10K
R10 10K
J16
J17
J18
J19
J20
J22
J23
J24
J25
J26
J27
J28
J29
32
IC2
33
64
J11
J12
J13
J14
J15
C4 6V100
oC5 0.1
C6 16V47
Ⓕ R22 1/4W 100
Z1
3.3K x 8
J2
J3
J4
J5
J6
J7
J8
J9
J10
R19 10K
R20 10K
R21 10K
J1
JP6
JP4
JP8
oC1
R1 1K
R23 180K
CN2
E
-15
E
EXP
S5
E1
S6
F1
S7
F#1
S8
G1
S9
G#1
S10
A1
S11
A#1
S12
B1
S14
ONE PEDAL
S13
C2
QSPG1001AA
QSPG1001AA

ACP **PSS** **PSM** **PA** **CN**

AC POWER SUPPLY, SUB POWER SUPPLY, MAIN POWER SUPPLY, POWER AMPLIFI

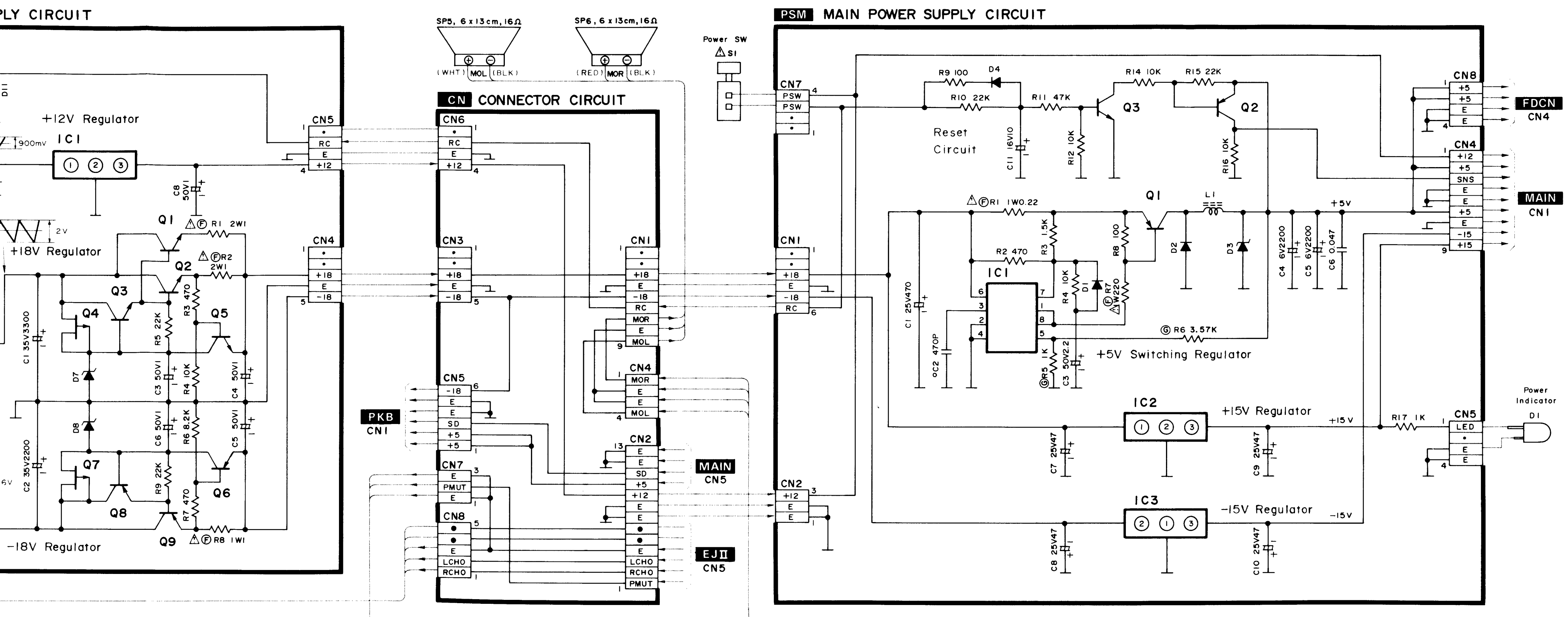

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
ACP AC POWER SUPPLY CIRCUIT
■ Products for [EK] [X] [XR] [XL] [XS] [XD] areas
△PC1 Power Cord
△L1
AC2
AC1
△C2 250V0.1
△C1 4700P
CN1
SW2
SW1
CN3
220V (BRN)
110V (ORG)
0V (BLU)
CN2
20V (RED)
0V (YEL)
220V (BRN)
120V (ORG)
0V (BLU)
△F2 T1.25A 250V
△F1 T2.5A 250V
△S1
Voltage Selector
Power Transformer △T2
Power Transformer △T1
PSS SUB POWER SUPPLY CIRCUIT
RL1
D11
Rectifier
△D9
△D10
+19V
900mV
+12V Regulator
IC1
C7 25V100
C8 50V1
+26V
2V
+18V Regulator
Q1
△Ⓕ R1 2W1
△Ⓕ R2 2W1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
[M][MC][XM] AREAS
△F1 3.15A 125V
△D5
△D1
△D6
△D2
C1 35V3300
C2 35V2200
D7
D8
R5 22K
R3 470
R4 10K
R6 8.2K
R9 22K
R7 470
C3 50V1
C4 50V1
C5 50V1
C6 50V1
-26V
16V
-18V Regulator
△Ⓕ R8 1W1
15V (RED)
0V (BLK)
20V (RED)
0V (GRY)
30V
0V
CN4
CN5
RC
E
+12
+18
-18
SP5, 6 x 13cm, 16Ω
SP6, 6 x 13cm, 16Ω
(WHT) MOL (BLK)
(RED) MOR (BLK)
Power SW △S1
CN CONNECTOR CIRCUIT
CN6
CN7
CN8
MOR
MOL
SD
+5
PMUT
LCHO
RCHO
PKB CN1
MAIN CN5
EJⅡ CN5
PSM MAIN POWER SUPPLY CIRCUIT
PSW
R9 100
D4
R10 22K
R11 47K
R14 10K
R15 22K
Reset Circuit
C11 16V10
R12 10K
R16 10K
△Ⓕ R1 1W0.22
L1
+5V
R2 470
R3 1.5K
R8 100
D2
D3
C4 6V2200
C5 6V2200
C6 0.047
C1 25V470
C2 470P
R4 10K
D1
△Ⓕ R7 1W220
Ⓖ R6 3.57K
Ⓖ R5 1K
C3 50V2.2
+5V Switching Regulator
IC2
+15V Regulator
+15V
R17
C7 25V47
C9 25V47
IC3
-15V Regulator
-15V
C8 25V47
C10 25V47
ACP AC POWER SUPPLY CIRCUIT
■ Products for European areas (Except for [EK] area)
ACP AC POWER SUPPLY CIRCUIT
■ Products for [MJ] [MC] [XM] and [N] areas.
[M][MC][XM] AREAS △F1 5A 125V
[N] AREA △F1 3.15A 125V
100V (WHT)
PA POWER AMPLIFIER CIRCUIT
30V
0V
Rectifier
△D11
△D12
△D9
△D8
△D1
△D2
△D5
△D4
-Vcc
+Vcc
△C30 250V0.1
C13 50V4700
C29 50V4700
-38V
40mV
+38V
70mV
IC1-1
Power Amplifier
R1 27K
C2 220P
R2 15K
Ⓝ C1 50V1
R3 2.2K
C3 25V10
R4 39K
R5 4.7K
R9 10K
R8 220K
R6 2.2K
R7 2.2K
C4 50V4.7
R2 1K
R3 1K
R11 680
C5 50V4.7
Ⓣ C6 0.1
△Ⓕ R14 1/2W4.7
Ⓨ C32 50V22
Ⓨ C14 50V3.3
IC1-2
R24 27K
Ⓝ C12 50V1
C11 220P
R27 15K
C7 50V47
△Ⓕ R15 1/4W100
R21 2.2K
C10 25V10
R20 39K
R19 47K
C9 50V47
R17 2.2K
R18 2.2K
Ⓣ C23 0.1
△Ⓕ R41 1/2W4.7
Ⓨ C31 50V8.2
Ⓨ C15 50V3.3
TWL
SPL
SPR
TWR
SP3 6.5cm, 8Ω
SP1 20cm, 8Ω
SP2 20cm, 8Ω
SP4 6.5cm, 8Ω
(YEL)
(GRY)
(WHT)
(RED)
(BLK)
(BRN)
①
②
⑤
⑥
⑨
⑩
⑪

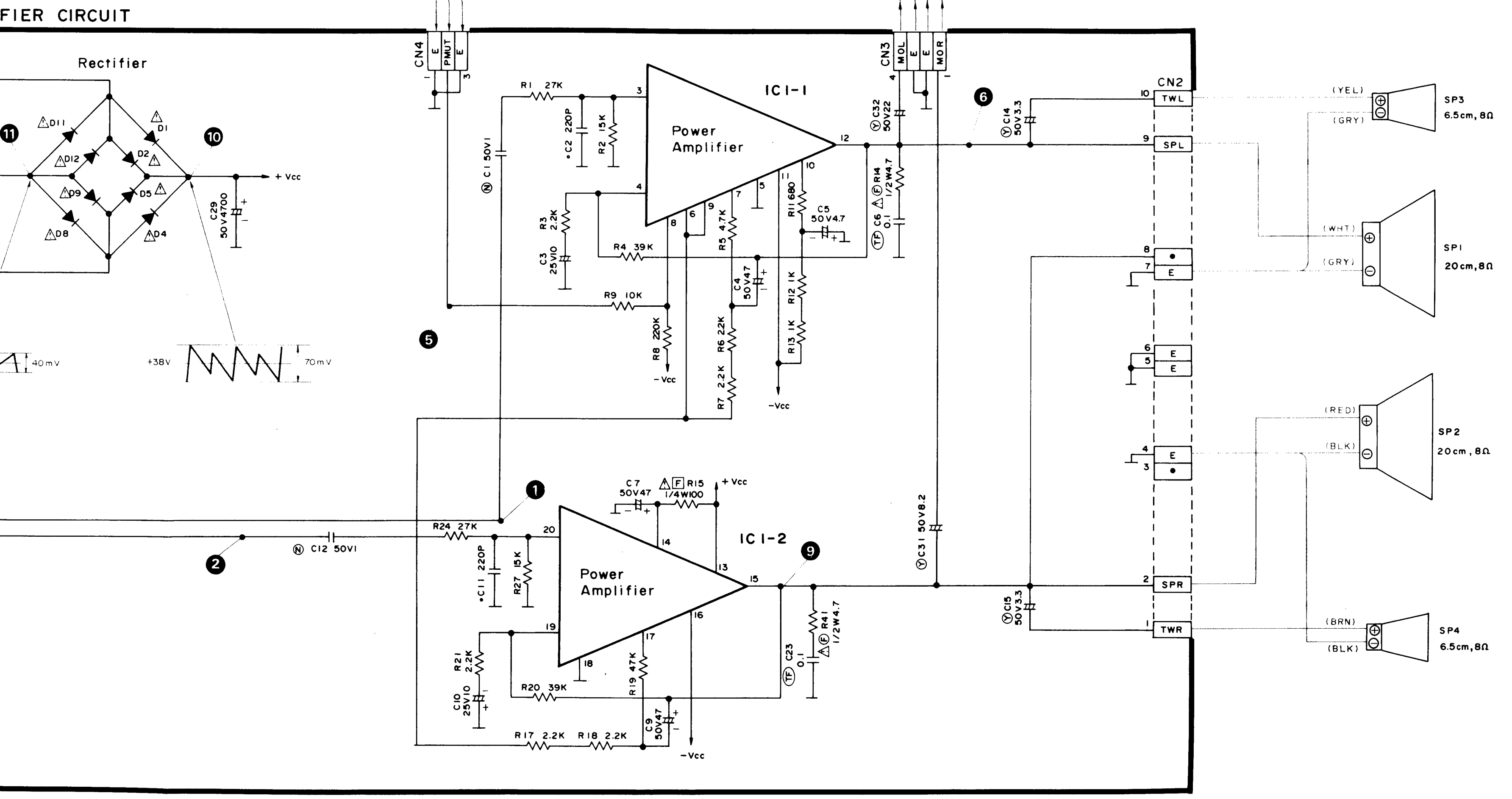
NOTES:

ACP
- FUSES
  - F1: **N**
  - F1: **M** **MC**
  - F1: **EK** **XR**
  - F2: **XS** **XD**
  - F2:

PSS
- IC
  - IC1:
- TRANSISTOR
  - Q1, 2:
  - Q3, 5:
  - Q4, 7:
  - Q6, 8:
  - Q9:
- DIODES
  - D1, 2:
  - D5, 6, 9, 10:
  - D7, 8:
  - D11:
- FUSES
  - F1, 2: **M** **MC** **XM**

POWER SUPPLY, SUB POWER SUPPLY, MAIN POWER SUPPLY, POWER AMPLIFIER & CONNECTOR CIRCUIT DIAGRAM


PLY CIRCUIT
+12V Regulator
IC1
900mV
+18V Regulator
-18V Regulator
Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9
CN5
CN4
SP5, 6 x 13cm, 16Ω
SP6, 6 x 13cm, 16Ω
(WHT) MOL (BLK)
(RED) MOR (BLK)
Power SW
S1
CN CONNECTOR CIRCUIT
CN6
CN3
CN1
CN5
CN4
CN2
CN7
CN8
PKB CN1
MAIN CN5
EJII CN5
RC
E
+12
+18
-18
MOR
MOL
SD
+5
PMUT
LCHO
RCHO
PSM MAIN POWER SUPPLY CIRCUIT
CN7
PSW
Reset Circuit
Q1 Q2 Q3
IC1
+5V Switching Regulator
IC2 +15V Regulator
IC3 -15V Regulator
CN8
FDCN CN4
CN4
MAIN CN1
SNS
+5V
+15V
-15V
CN5
LED
Power Indicator
D1
CN1
CN2


FIER CIRCUIT
Rectifier
+Vcc
+38V
40mV
70mV
CN4
PMUT
CN3
MOL
MOR
IC1-1
Power Amplifier
IC1-2
Power Amplifier
CN2
TWL
SPL
SPR
TWR
-Vcc
SP3 6.5cm, 8Ω
SP1 20cm, 8Ω
SP2 20cm, 8Ω
SP4 6.5cm, 8Ω
(YEL)
(GRY)
(WHT)
(GRY)
(RED)
(BLK)
(BRN)
(BLK)
❶
❷
❺
❻
❾
❿
⓫

NOTES:

ACP

- FUSES

F1: **N**	XBA1C31NS5
F1: **M** **MC** **XM**	XBA1C50NU100
F1: **EK** **XR** **XL**	XBA2C25TB0
F2: **XS** **XD** **X**	XBA2C12TB0
F2:	XBA2C12TB0

PSS

- IC

IC1:	SVIGM5F7812

- TRANSISTORS

Q1, 2:	2SD1266
Q3, 5:	2SC2320LFG
Q4, 7:	2SJ105GR
Q6, 8:	2SA1015-GR
Q9:	2SB941

- DIODES

D1, 2:	SVDGGP20GL
D5, 6, 9, 10:	SVDGERA1502Y
D7, 8:	MA4200
D11:	MA165TA5

- FUSES

F1, 2: **M** **MC** **XM**	XBA1C20NU100

PSM

- IC'S

IC1:	SVIGM5291P
IC2:	SVIGM5F7815
IC3:	SVIGM5F7915

- TRANSISTORS

Q1:	2SB953AQP
Q2:	2SA1015-GR
Q3:	2SC2320LFG

- DIODES

D1, 4:	MA165TA5
D2:	SVDGERC9102
D3:	MA2062LF

PA

- IC

IC1:	SVIGS4221M2M

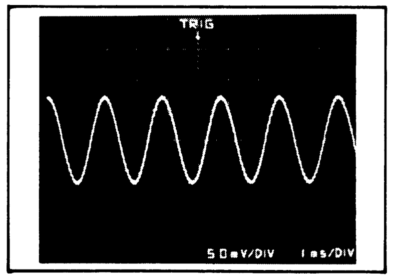
- DIODES

D1, 2, 4, 5, 8, 9, 11, 12:	SVDGS3V20-15

■ Measuring Conditions

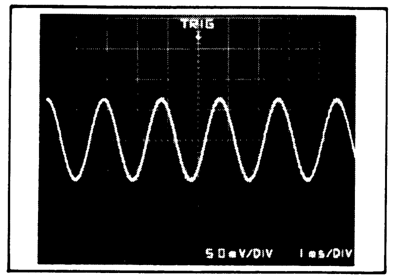
1. Set to the initial mode. (Refer to page I-3)
2. Set the all parts INITIAL TOUCH SENSE function (EFFECT MODE: Page 4) to "0". (Upper=0, Lower=0, Bass=0)
3. Change the unit setting as indicate below the pictures to confirm the waveforms.

❶



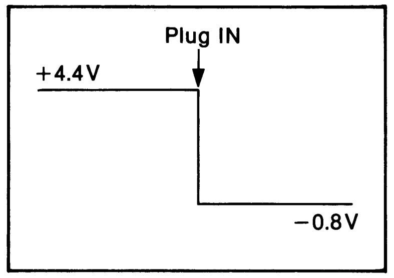
- Upper Tab & Organ............Flute 8′
- Tremolo ....OFF
- EXP, Main Vol......................Max
- Upper Keyboard..................C4 Key

❷



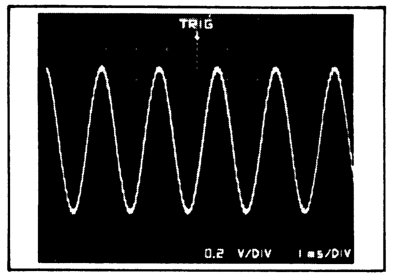
- Upper Tab & Organ............Flute 8′
- Tremolo ....OFF
- EXP, Main Vol......................Max
- Pedal Keyboard..................C2 Key

❺



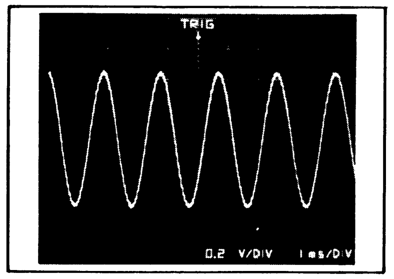
- HP Plug...............................IN

❻



- Upper Tab & Organ............Flute 8′
- Tremolo ....OFF
- EXP, Main Vol......................Max
- Upper Keyboard..................C4 Key

❾



- Upper Tab & Organ............Flute 8′
- Tremolo ....OFF
- EXP, Main Vol......................Max
- Upper Keyboard..................C4 Key

❿, ⓫

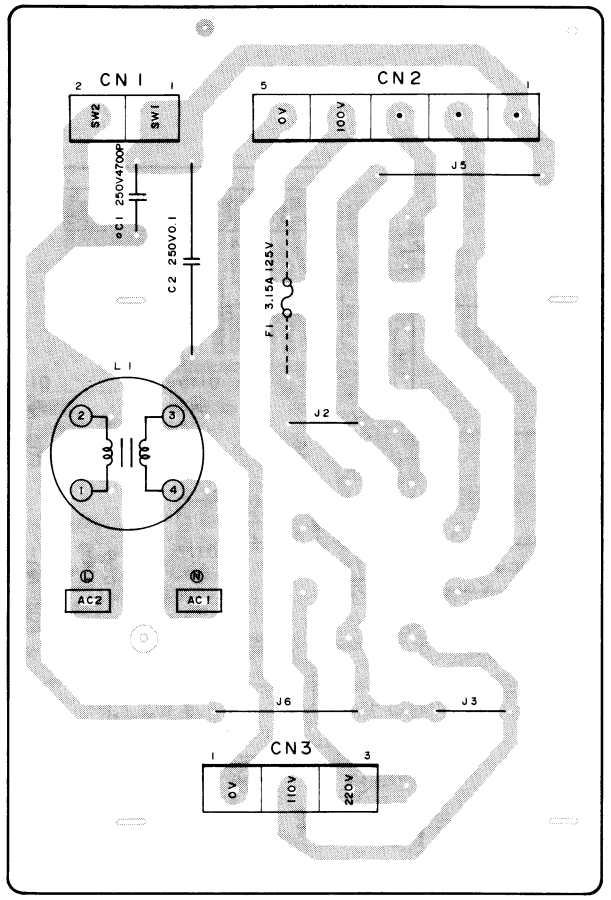
❿ +38V

⓫ −38V

ACP PSS PSM AC POWER SUPPLY, SUB POWER SUPPLY, MAIN POWER SUPPLY CIRCUIT BOARD

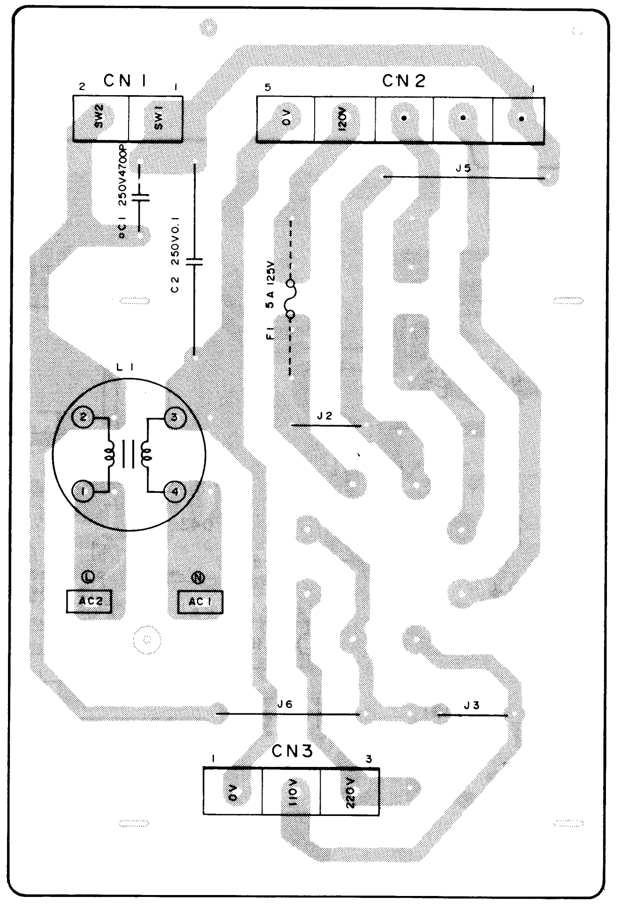
ACP AC POWER SUPPLY P.C.B.

• [N] only **SOPG202511A**


CN1
SW2
SW1
CN2
0V
100V
C1 250V4700P
C2 250V0.1
F1 3.15A 125V
J5
J2
L1
AC2
AC1
J6
J3
CN3
0V
110V
220V

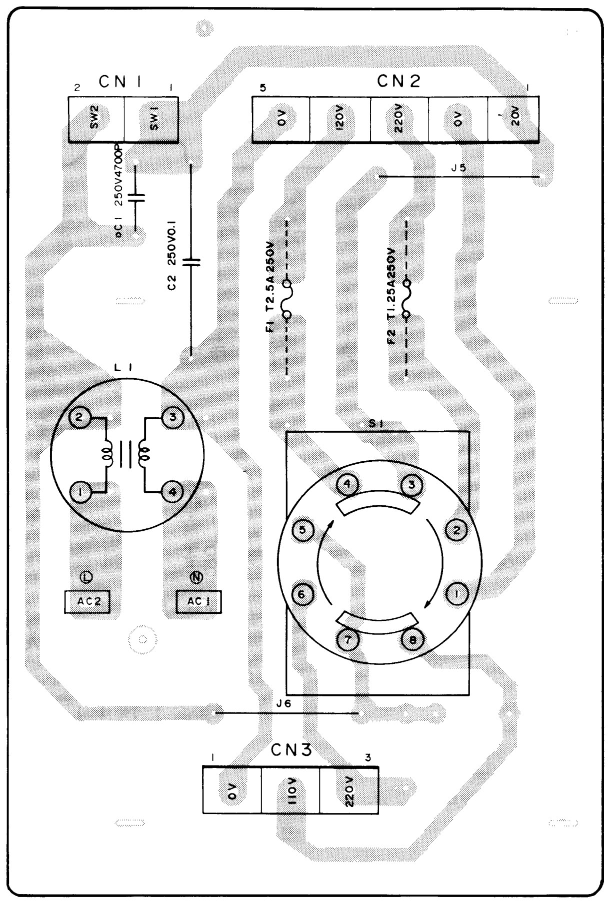
NOTE: F1: XBA1C31NS5

• [M] [MC] [XM] only **SOPG202561A**


CN1
SW2
SW1
CN2
0V
120V
C1 250V4700P
C2 250V0.1
F1 5A 125V
J5
J2
L1
AC2
AC1
J6
J3
CN3
0V
110V
220V

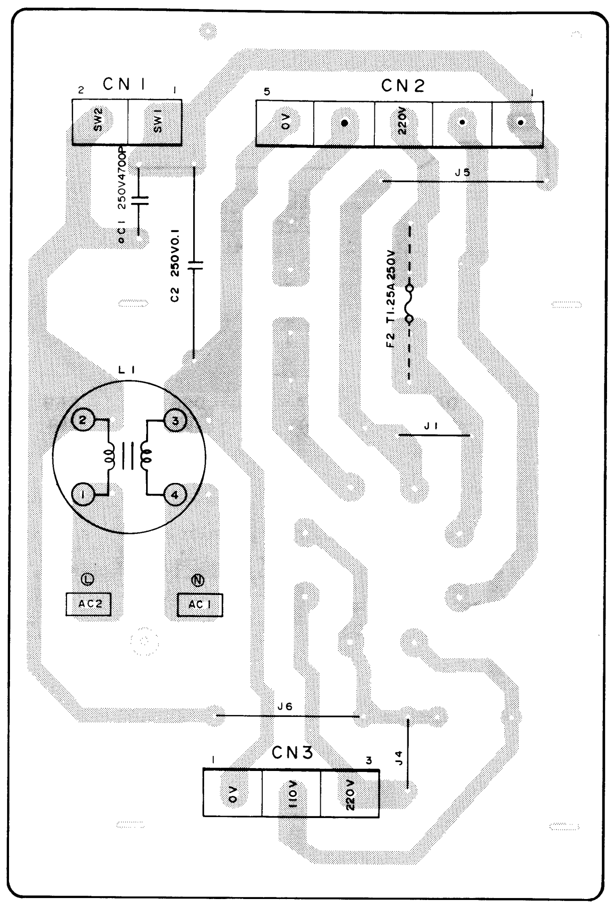
NOTE: F1: XBA1C50NU100

• [EK] [XL] [XR] [XS] [XD] [X] only **SOPG202531A**


CN1
SW2
SW1
CN2
0V
120V
220V
0V
20V
C1 250V4700P
C2 250V0.1
F1 T2.5A 250V
F2 T1.25A 250V
J5
S1
L1
AC2
AC1
J6
CN3
0V
110V
220V

NOTES: F1: XBA2C25TB0 F2: XBA2C12TB0

• Others **SOPG202521A**

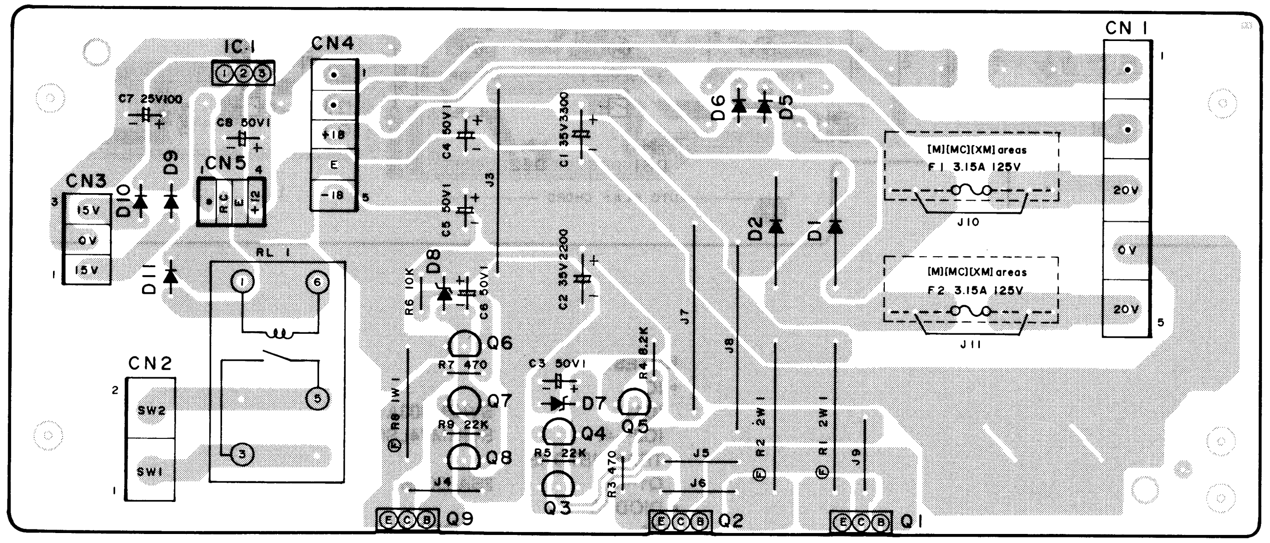

CN1
SW2
SW1
CN2
0V
220V
C1 250V4700P
C2 250V0.1
F2 T1.25A 250V
J5
J1
L1
AC2
AC1
J6
J4
CN3
0V
110V
220V

NOTE: F2: XBA2C12TB0

PSS SUB POWER SUPPLY P.C.B.

• [M] [MC] [XM] only **SXPG201521B**

• Others **SXPG201511B**


IC1
CN4
+18
E
-18
CN1
20V
0V
20V
C7 25V100
C8 50V1
CN3
15V
0V
15V
D10
D9
CN5
RC
E
+12
D11
RL1
CN2
SW2
SW1
C4 50V1
C5 50V1
C1 35V3300
C2 35V2200
D6
D5
D2
D1
[M][MC][XM] areas
F1 3.15A 125V
J10
F2 3.15A 125V
J11
R6 10K
D8
C6 50V1
Q6
R7 470
Q7
R9 22K
Q8
R8 1W1
C3 50V1
D7
Q4
Q5
R4 8.2K
R5 22K
Q3
R3 470
J7
J8
J3
J4
J5
J6
R2 2W1
R1 2W1
J9
Q9
Q2
Q1

PSS

NOTES:

- IC

IC1:	SVIGM5F7812

- FUSES

F1, 2: M MC XM	XBA1C31NU100

- TRANSISTORS

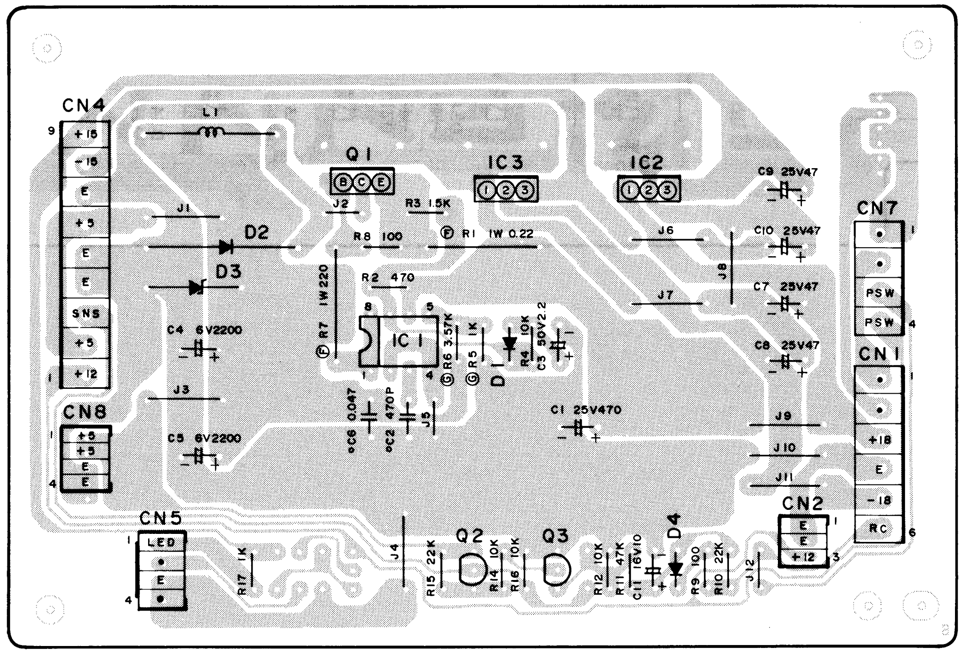
Q1, 2:	2SD1266
Q3, 5:	2SC2320LFG
Q4, 7:	2SJ105GR
Q6, 8:	2SA1015-GR
Q9:	2SB941

- DIODES

D1, 2:	SVDGGP20GL
D5, 6, 9, 10:	SVDGERA1502Y
D7, 8:	MA4200
D11:	MA165TA5

PSM MAIN POWER SUPPLY P.C.B.

SXPG201511C


CN4
+15
-15
E
+5
E
E
SNS
+5
+12
L1
Q1
IC3
IC2
J1
D2
D3
R3 15K
R8 100
R1 1W 0.22
R2 470
R7 1W220
IC1
R6 3.57K
R5 1K
D1
R4 10K
C3 50V2.2
C4 6V2200
C5 6V2200
C6 0.047
C2 470P
J2
J3
J5
J6
J7
J8
J9
J10
J11
C9 25V47
C10 25V47
C7 25V47
C8 25V47
C1 25V470
CN7
PSW
PSW
CN1
+18
E
-18
RC
CN8
+5
+5
E
E
CN5
LED
E
CN2
E
E
+12
R17 1K
J4
R15 22K
Q2
R14 10K
R16 10K
Q3
R12 10K
R11 47K
C11 16V10
D4
R9 100
R10 22K
J12

PSM

NOTES:

- IC'S

IC1:	SVIGM5291P
IC2:	SVIGM5F7815
IC3:	SVIGM5F7915

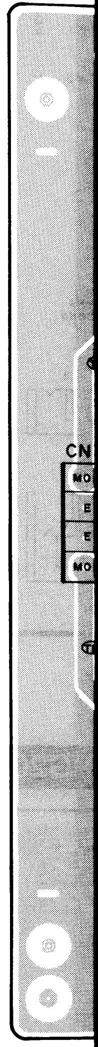
- TRANSISTORS

Q1:	2SB953AQP
Q2:	2SA1015-GR
Q3:	2SC2320LFG

- DIODES

D1, 4:	MA165TA5
D2:	SVDGERC9102
D3:	MA2062LF

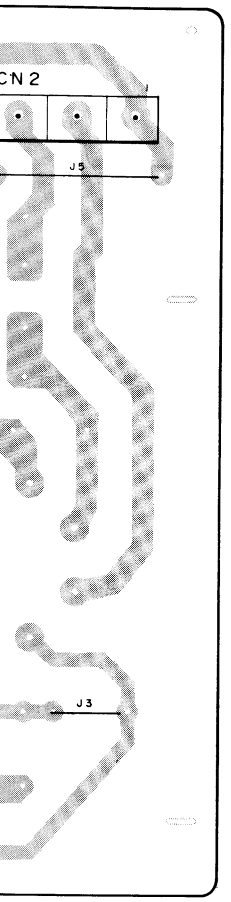
PA



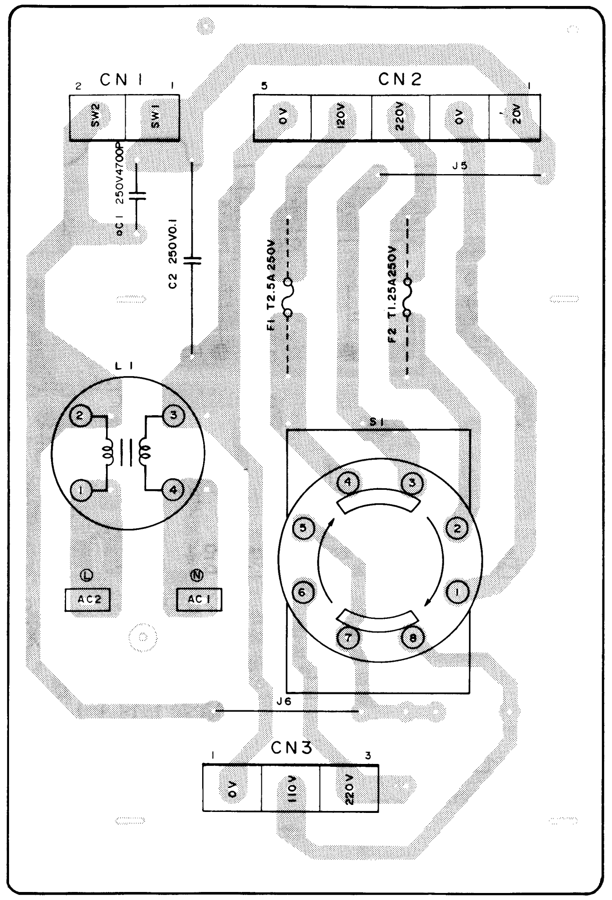
, SUB POWER SUPPLY, MAIN POWER SUPPLY CIRCUIT BOARD

5 6 7 8 9

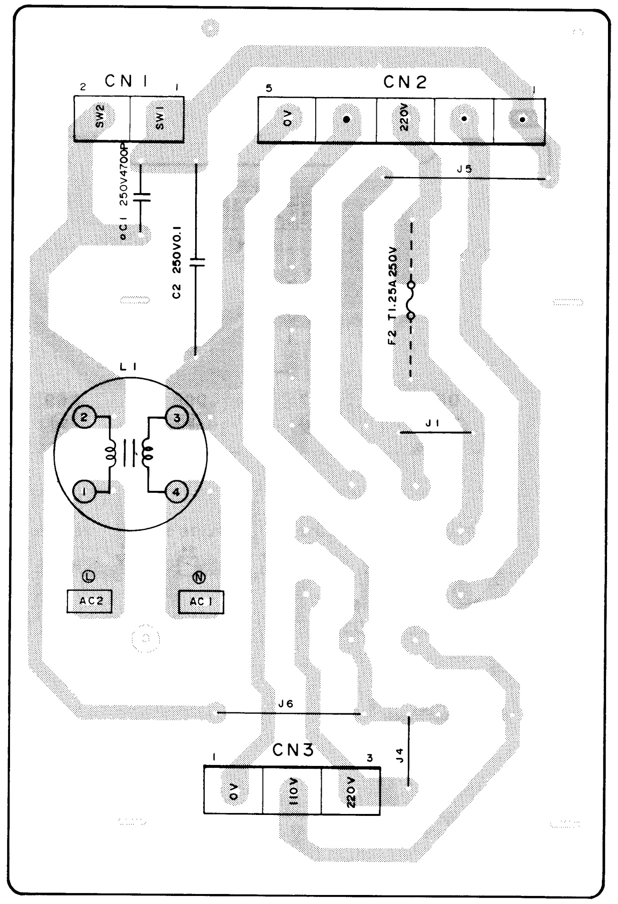
DPG202561A



• [EK] [XL] [XR] [XS] [XD] [X] only **SOPG202531A**


CN1
SW2
SW1
CN2
0V
120V
220V
0V
20V
J5
C1 250V4700P
C2 250V0.1
F1 T2.5A 250V
F2 T1.25A 250V
L1
S1
AC2
AC1
J6
CN3
0V
110V
220V

• Others **SOPG202521A**

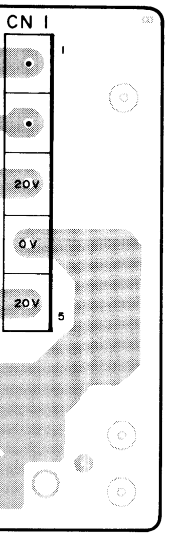

CN1
SW2
SW1
CN2
0V
220V
J5
C1 250V4700P
C2 250V0.1
F2 T1.25A 250V
L1
J1
AC2
AC1
J6
CN3
0V
110V
220V
J4

NOTES: F1: XBA2C25TB0 F2: XBA2C12TB0

NOTE: F2: XBA2C12TB0

G201521B

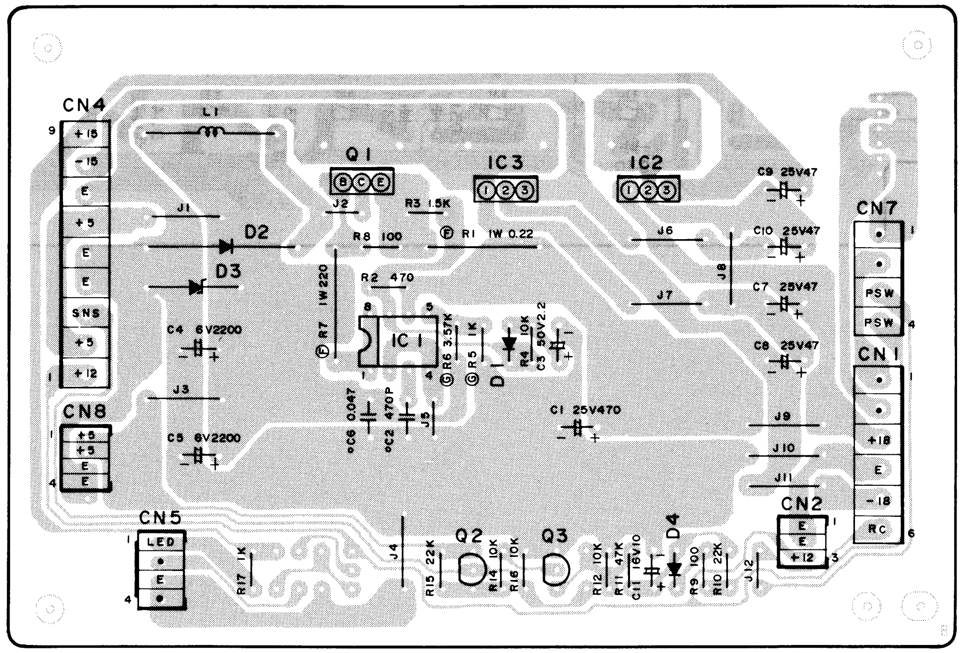
G201511B


CN1
20V
0V
20V

GL
02Y

PSM MAIN POWER SUPPLY P.C.B.

SXPG201511C


CN4
+18
-18
E
+5
E
E
SNS
+5
+12
CN8
L1
J1
D2
D3
Q1
IC3
IC2
R3 1.5K
R8 100
R1 1W 0.22
R7 1W220
R2 470
IC1
C4 6V2200
C5 6V2200
J3
C6 0.047
C2 470P
R6 3.57K
R5 1K
D1
R4 10K
C3 50V2.2
C1 25V470
C9 25V47
C10 25V47
C7 25V47
C8 25V47
J6
J7
J8
J9
J10
J11
J12
CN7
PSW
PSW
CN1
+18
E
-18
RC
CN2
E
E
+12
CN5
LED
R17 1K
J4
R15 22K
Q2
R14 10K
R16 10K
Q3
R12 10K
R11 47K
C11 16V10
D4
R9 100
R10 22K

PSM

NOTES:

- IC'S

IC1:	SVIGM5291P
IC2:	SVIGM5F7815
IC3:	SVIGM5F7915

- TRANSISTORS

Q1:	2SB953AQP
Q2:	2SA1015-GR
Q3:	2SC2320LFG

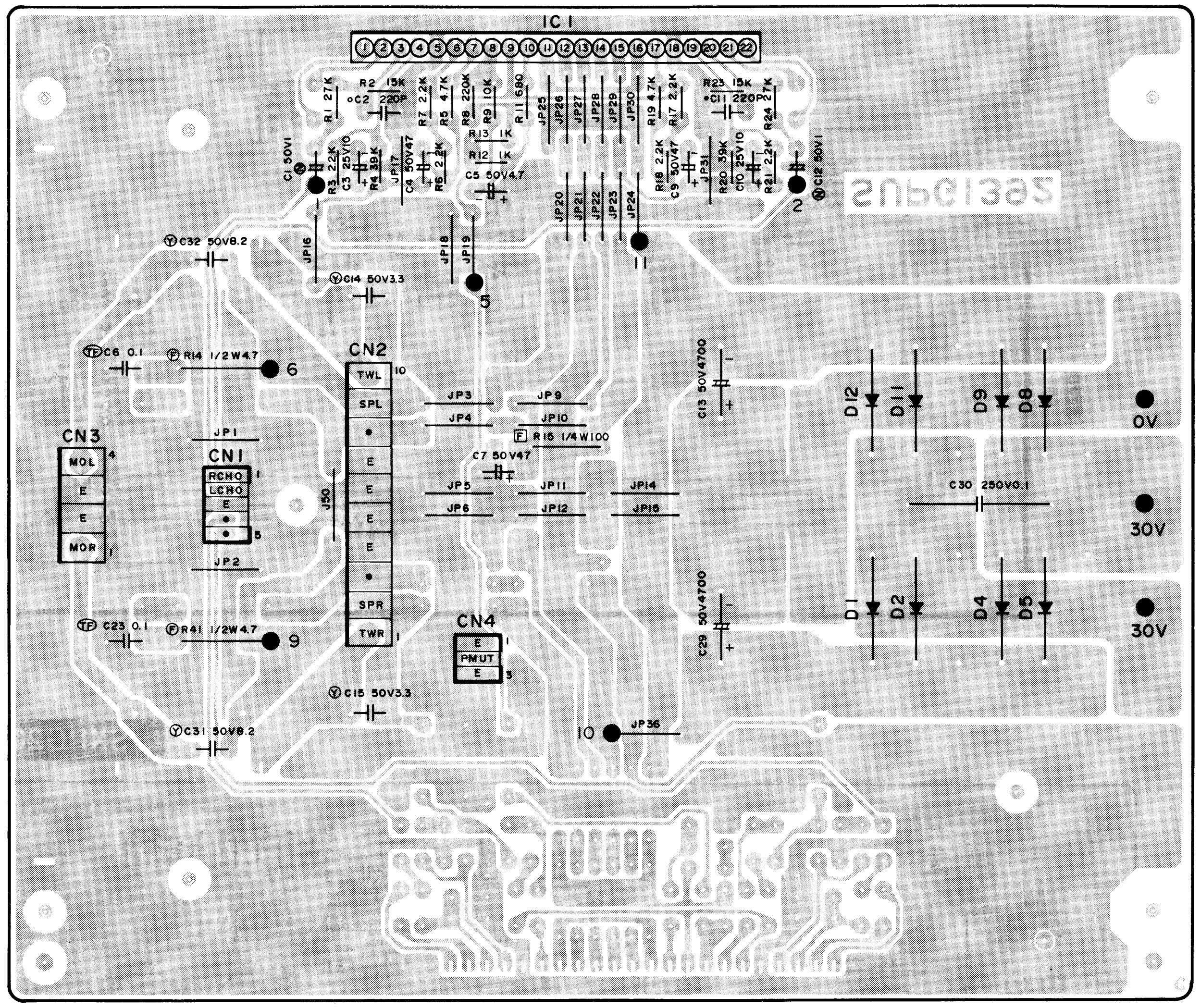
- DIODES

D1, 4:	MA165TA5
D2:	SVDGERC9102
D3:	MA2062LF

PA POWER AMPLIFIER CIRCUIT BOARD

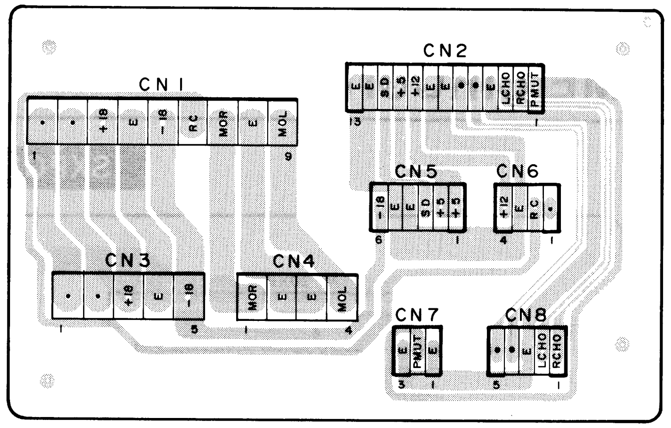
1 2 3 4

SXPG139271


A
B
C
D
E
F
IC1
R1 27K
R2 15K
C2 220P
R7 2.2K
R5 4.7K
R8 220K
R9 10K
R11 680
R13 1K
R12 1K
C5 50V4.7
R18 2.2K
R19 4.7K
R17 2.2K
C9 50V47
R23 15K
C11 220P
R24 27K
R20 39K
C10 25V10
R21 2.2K
C12 50V1
C1 50V1
R3 2.2K
C3 25V10
C4 50V47
R4 39K
R6 2.2K
C32 50V8.2
C14 50V3.3
C6 0.1
R14 1/2W4.7
CN2
TWL
SPL
E
SPR
TWR
CN3
MOL
E
MOR
CN1
RCHO
LCHO
E
JP1
JP2
C7 50V47
R15 1/4W100
C13 50V4700
C29 50V4700
D12
D11
D9
D8
D1
D2
D4
D5
0V
30V
30V
C30 250V0.1
C23 0.1
R41 1/2W4.7
CN4
E
PMUT
C15 50V3.3
C31 50V8.2
JP36
2
5
6
9
10
11

CN CONNECTOR BOARD

SXPG200711B


CN1
+18
E
-18
RC
MOR
E
MOL
CN2
LCHO
RCHO
PMUT
CN5
CN6
CN3
CN4
CN7
CN8

PA

NOTES:

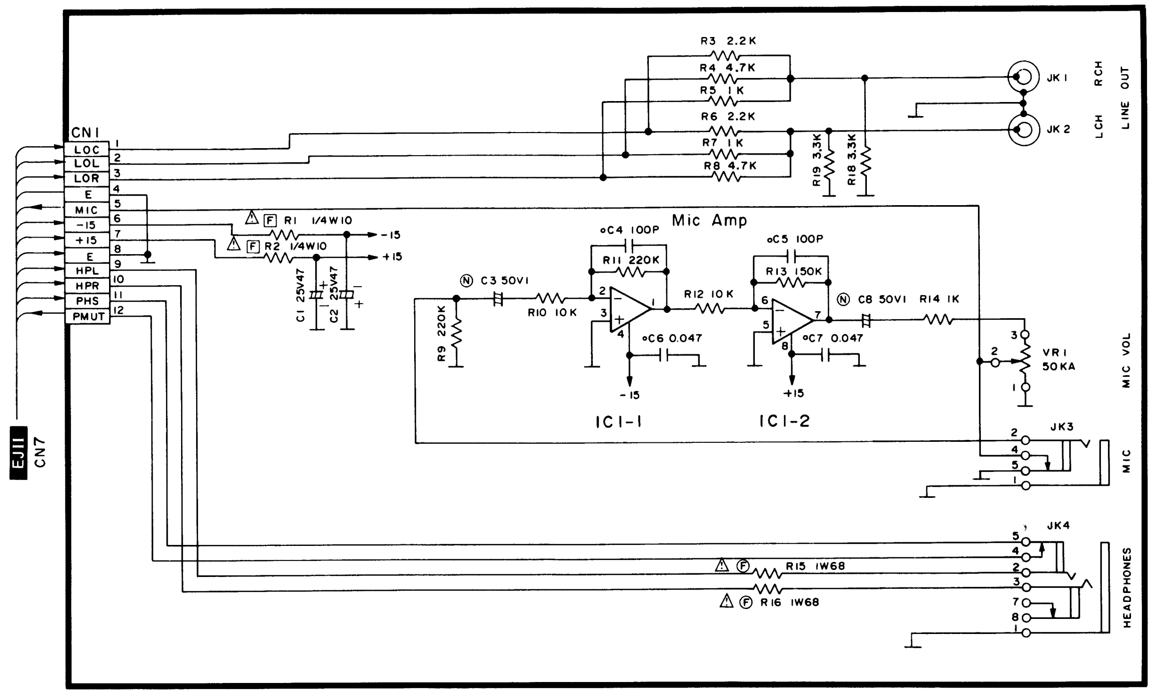
- IC

IC1:	SVIGS4221M2M

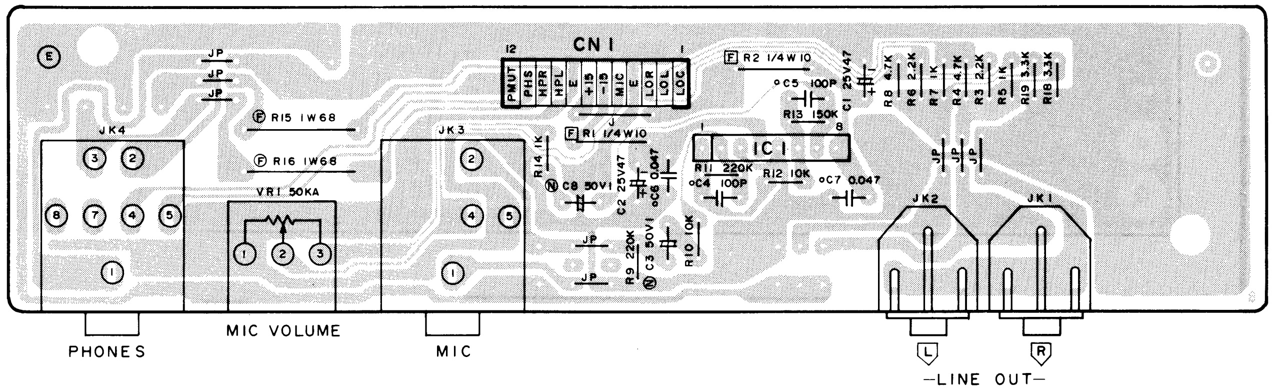
- DIODES

D1, 2, 4, 5, 8, 9, 11, 12:	SVDGS3V20-15

JACK JACK CIRCUIT DIAGRAM & CIRCUIT BOARD


CN1
LOC
LOL
LOR
E
MIC
-15
+15
E
HPL
HPR
PHS
PMUT
R3 2.2K
R4 4.7K
R5 1K
R6 2.2K
R7 1K
R8 4.7K
R19 3.3K
R18 3.3K
JK1
JK2
RCH
LCH
LINE OUT
R1 1/4W10
R2 1/4W10
C1 25V47
C2 25V47
Mic Amp
C4 100P
R11 220K
C5 100P
R13 150K
C3 50V1
R10 10K
R9 220K
C6 0.047
R12 10K
C7 0.047
C8 50V1
R14 1K
VR1 50KA
MIC VOL
IC1-1
IC1-2
JK3
MIC
JK4
R15 1W68
R16 1W68
HEADPHONES
EJ11 CN7

SXPG201411

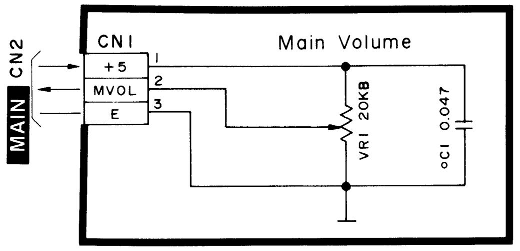

CN1
PMUT
PHS
HPR
HPL
E
+15
-15
MIC
E
LOR
LOL
LOC
R2 1/4W10
R1 1/4W10
C5 100P
R13 150K
C1 25V47
R8 4.7K
R6 2.2K
R7 1K
R4 4.7K
R3 2.2K
R5 1K
R19 3.3K
R18 3.3K
IC1
R11 220K
R12 10K
C4 100P
C7 0.047
C8 50V1
C2 25V47
C6 0.047
R14 1K
R9 220K
C3 50V1
R10 10K
JP
R15 1W68
R16 1W68
JK4
JK3
VR1 50KA
JK2
JK1
L
R
PHONES
MIC VOLUME
MIC
-LINE OUT-

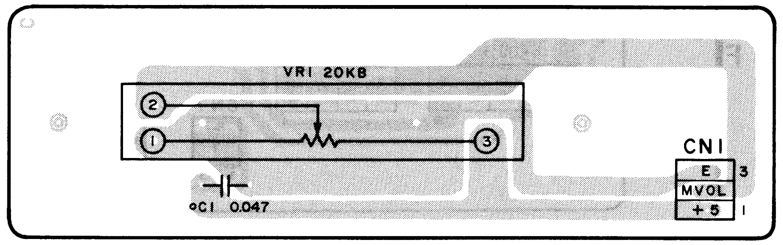
NOTES:
- IC

IC1: SVIGM5218L

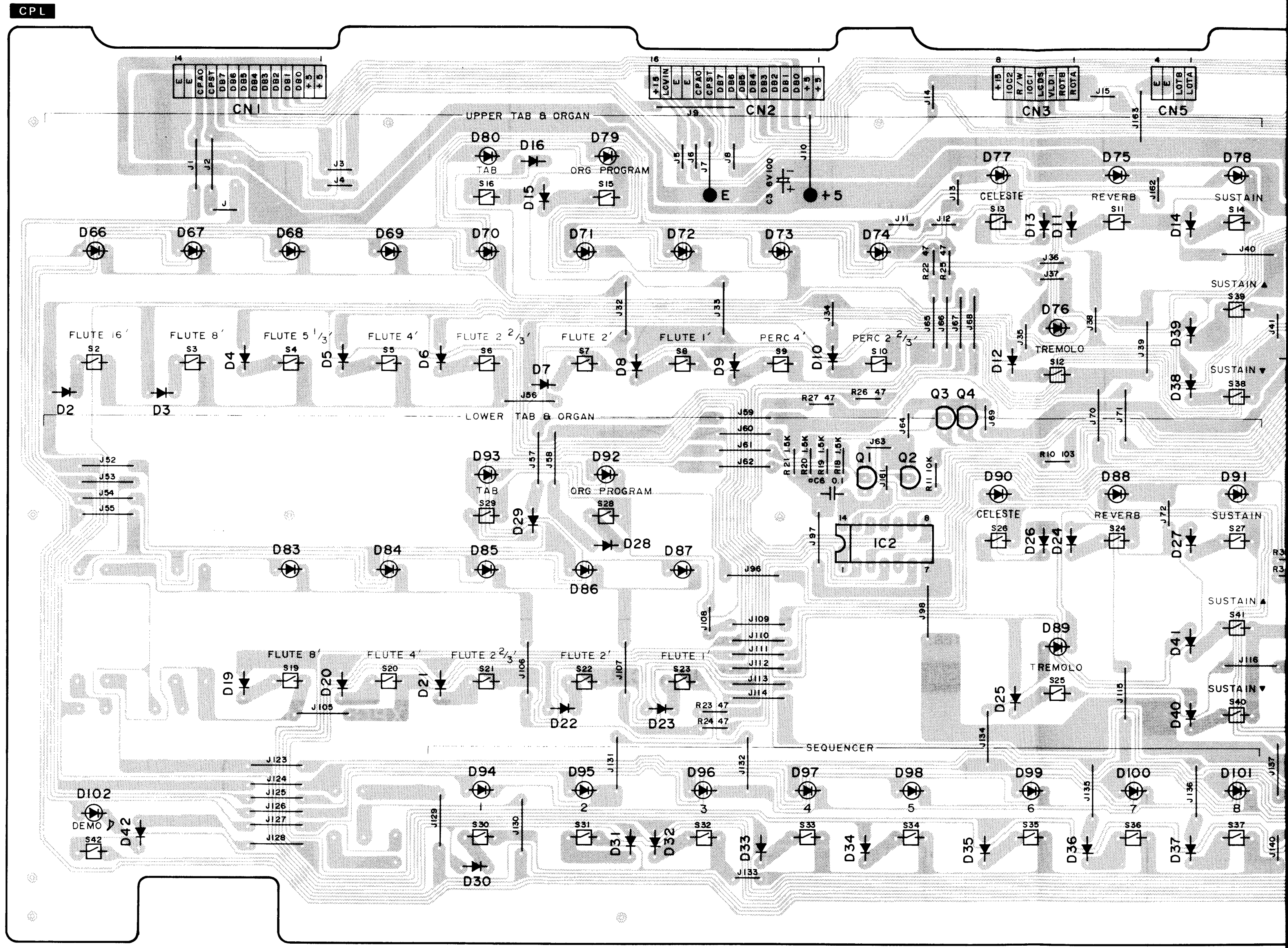
MVOL MAIN VOLUME CIRCUIT

SXPG200711E


MAIN CN2
CN1
+5
MVOL
E
Main Volume
VR1 20KB
C1 0.047

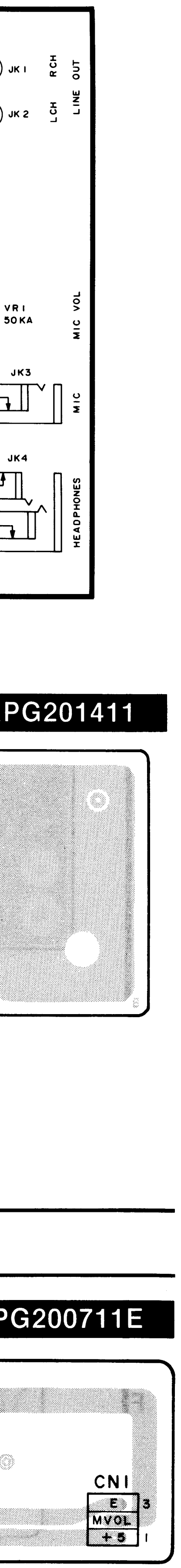

VR1 20KB
C1 0.047
CN1
E
MVOL
+5

CPL ESW UPPER CONTROL PANEL LEFT, ENCODER SWITCH

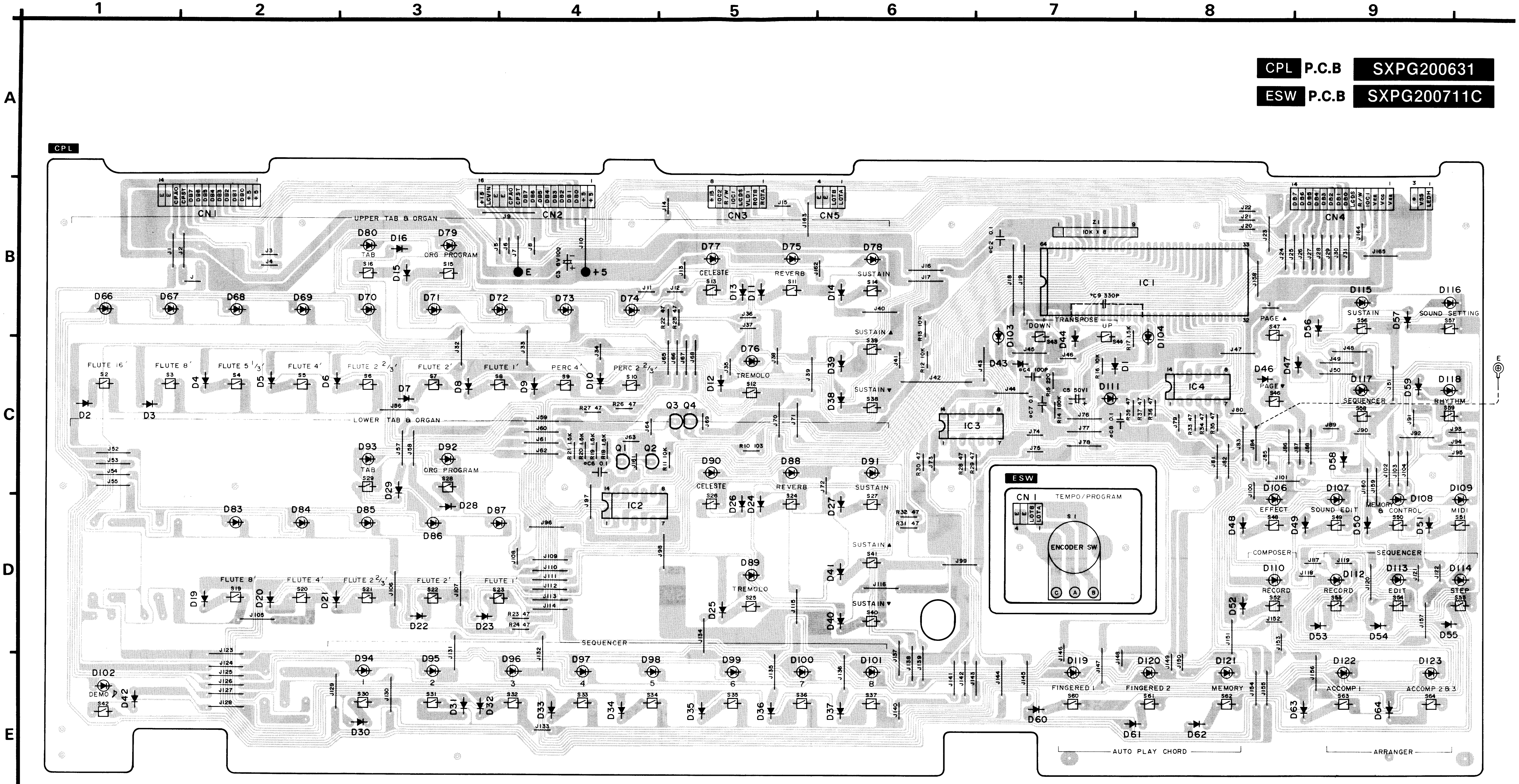

CPL
CN1
CN2
CN3
CN5
UPPER TAB & ORGAN
LOWER TAB & ORGAN
SEQUENCER
D80 TAB
D79 ORG PROGRAM
D77 CELESTE
D75 REVERB
D78 SUSTAIN
FLUTE 16'
FLUTE 8'
FLUTE 5 1/3'
FLUTE 4'
FLUTE 2 2/3'
FLUTE 2'
FLUTE 1'
PERC 4'
PERC 2 2/3'
D76 TREMOLO
SUSTAIN ▲
SUSTAIN ▼
D93 TAB
D92 ORG PROGRAM
D90 CELESTE
D88 REVERB
D91 SUSTAIN
D89 TREMOLO
IC2
Q1
Q2
Q3
Q4
D102 DEMO
D94 1
D95 2
D96 3
D97 4
D98 5
D99 6
D100 7
D101 8
E
+5
C3 6V100

OARD

CPL ESW UPPER CONTROL PANEL LEFT, ENCODER SWITCH CIRCUIT BOARD

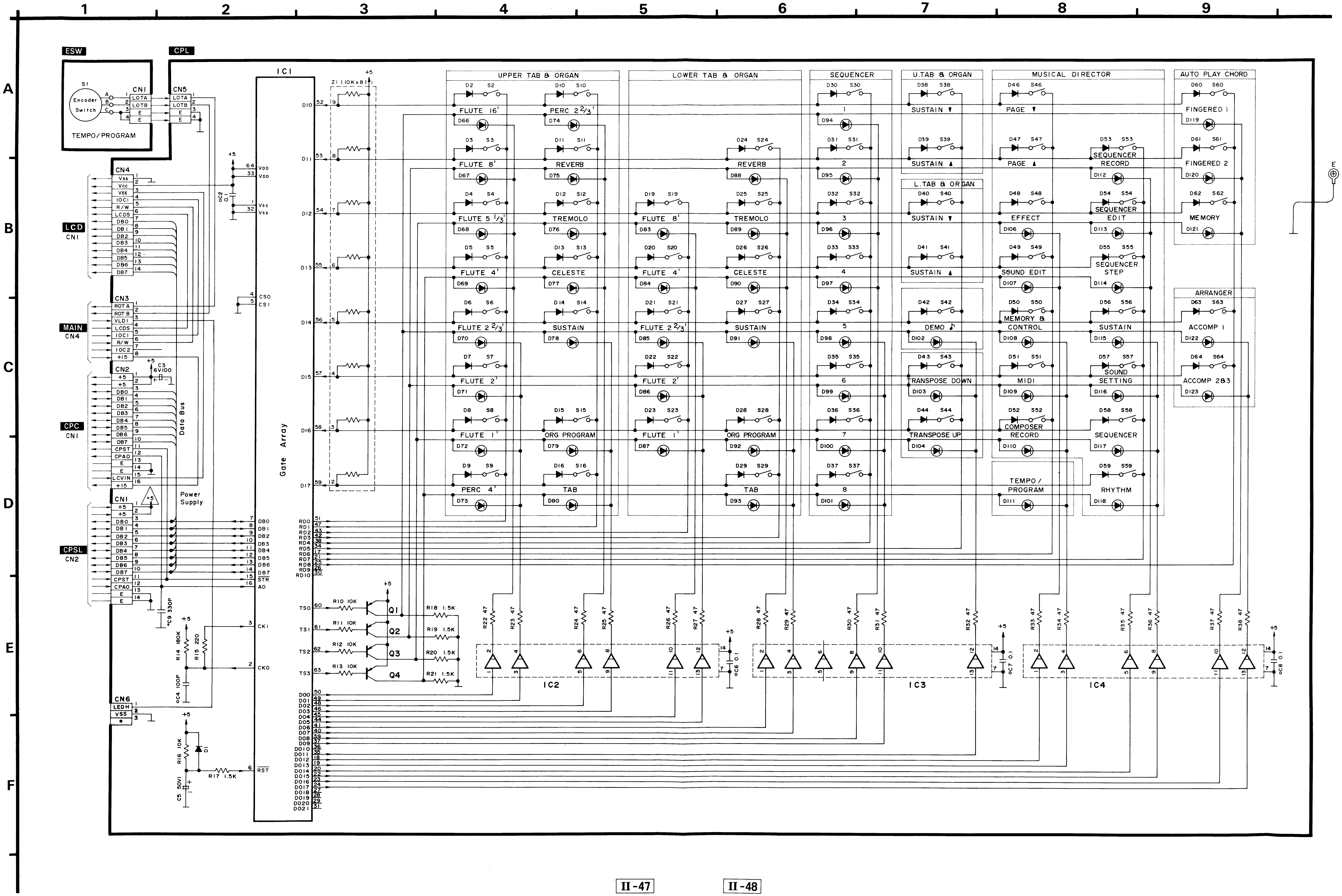

JK1
JK2
RCH
LCH
LINE OUT
VR1 50KA
MIC VOL
JK3
MIC
JK4
HEADPHONES
PG201411
PG200711E
CN1
E
MVOL
+5

CPL P.C.B SXPG200631
ESW P.C.B SXPG200711C


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
CPL
CN1
CN2
CN3
CN4
CN5
UPPER TAB & ORGAN
LOWER TAB & ORGAN
SEQUENCER
IC1
IC2
IC3
IC4
Q1
Q2
Q3
Q4
TAB
ORG PROGRAM
CELESTE
REVERB
SUSTAIN
TREMOLO
FLUTE 16'
FLUTE 8'
FLUTE 5 1/3'
FLUTE 4'
FLUTE 2 2/3'
FLUTE 2'
FLUTE 1'
PERC 4'
PERC 2 2/3'
SUSTAIN ▲
SUSTAIN ▼
TRANSPOSE
DOWN
UP
PAGE ▲
PAGE ▼
SOUND SETTING
SEQUENCER
RHYTHM
EFFECT
SOUND EDIT
MEMORY & CONTROL
MIDI
COMPOSER
RECORD
EDIT
STEP
DEMO
FINGERED 1
FINGERED 2
MEMORY
ACCOMP 1
ACCOMP 2 & 3
AUTO PLAY CHORD
ARRANGER
ESW
CN1
TEMPO/PROGRAM
S1
ENCODER SW
E
+5

NOTES:
- IC'S
  - IC1: SVIGM603A121
  - IC2~4: SVIGM74LS07
- TRANSISTORS
  - Q1~4: 2SA830SB
- DIODES
  - D1~16, 19~64: MA165TA5
  - D66~78, 80, 83~91, 93, 103, 104, 119~123: LN282R
  - D79, 92, 94~102, 106~118: LN382G

CPL ESW UPPER CONTROL PANEL LEFT, ENCODER SWITCH CIRCUIT DIAGRAM

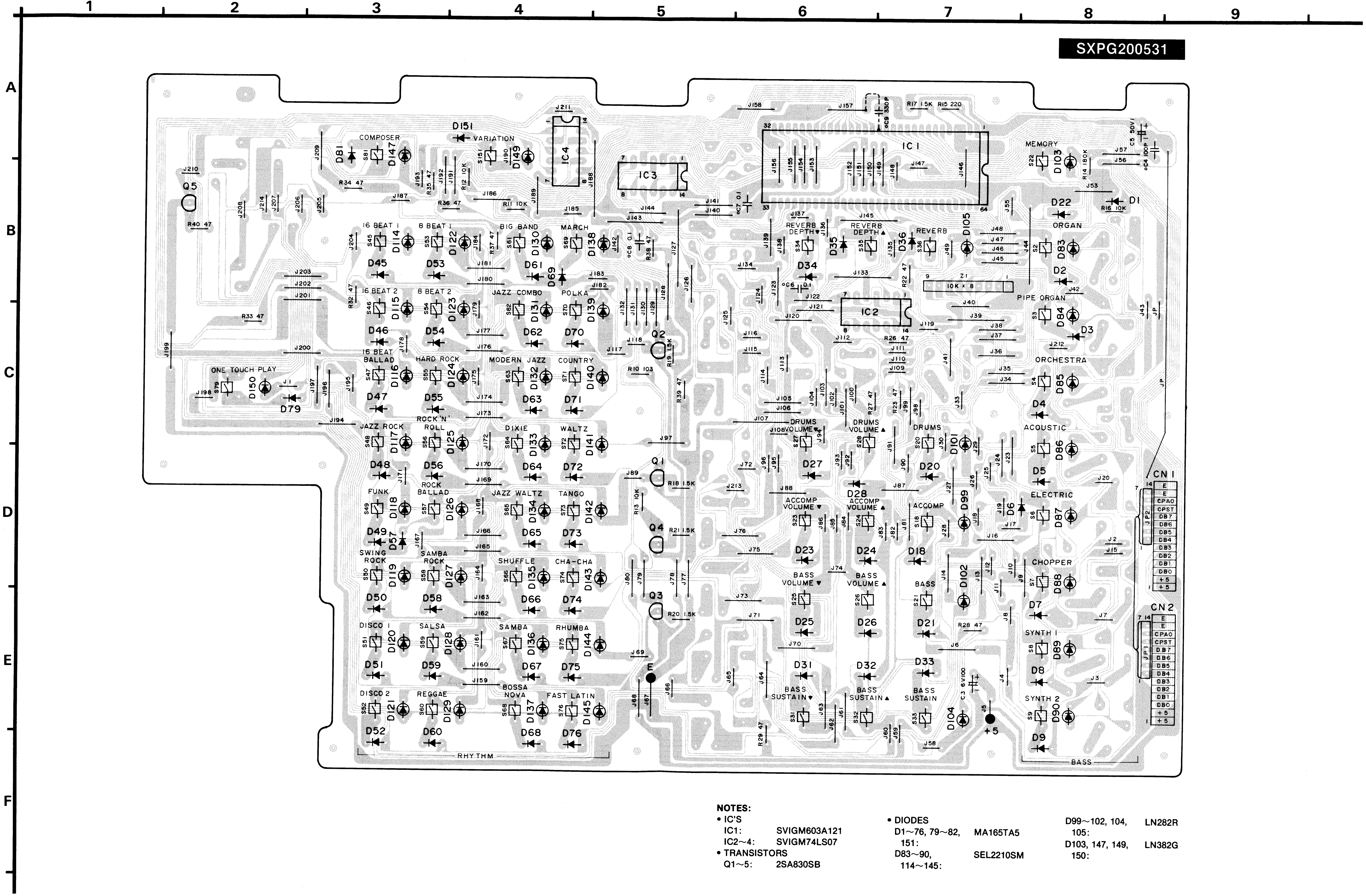


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
ESW
CPL
S1
Encoder Switch
TEMPO/PROGRAM
CN1
LOTA
LOTB
E
CN5
IC1
Gate Array
Z1 (10K×8)
+5
VDD
VSS
C2 0.1
CN4
Vss
Vcc
VEE
IOC1
R/W
LCDS
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
LCD CN1
CN3
ROT A
ROT B
VLD1
IOC2
+15
MAIN CN4
CN2
CPST
CPA0
LCVIN
CPC CN1
Data Bus
C3 6V100
Power Supply
CPSL CN2
STR
A0
C9 330P
CS0
CS1
DI0
DI1
DI2
DI3
DI4
DI5
DI6
DI7
RD0
RD10
TS0
TS1
TS2
TS3
R10 10K
R11 10K
R12 10K
R13 10K
Q1
Q2
Q3
Q4
R18 1.5K
R19 1.5K
R20 1.5K
R21 1.5K
CKI
CKO
R14 180K
R15 220
C4 100P
CN6
LEDH
VSS
R16 10K
D1
R17 1.5K
RST
C5 50V1
DO0
DO21
UPPER TAB & ORGAN
FLUTE 16'
PERC 2 2/3'
FLUTE 8'
REVERB
FLUTE 5 1/3'
TREMOLO
FLUTE 4'
CELESTE
FLUTE 2 2/3'
SUSTAIN
FLUTE 2'
FLUTE 1'
ORG PROGRAM
PERC 4'
TAB
LOWER TAB & ORGAN
SEQUENCER
1
2
3
4
5
6
7
8
U.TAB & ORGAN
SUSTAIN ▼
SUSTAIN ▲
L.TAB & ORGAN
DEMO ♪
TRANSPOSE DOWN
TRANSPOSE UP
MUSICAL DIRECTOR
PAGE ▼
PAGE ▲
EFFECT
SOUND EDIT
MEMORY & CONTROL
MIDI
COMPOSER RECORD
TEMPO/PROGRAM
SEQUENCER RECORD
SEQUENCER EDIT
SEQUENCER STEP
SOUND SETTING
RHYTHM
AUTO PLAY CHORD
FINGERED 1
FINGERED 2
MEMORY
ARRANGER
ACCOMP 1
ACCOMP 2&3
R22 47
R38 47
IC2
IC3
IC4
C6 0.1
C7 0.1
C8 0.1
E

CPSL

LOWER CONTROL PANEL LEFT CIRCUIT BOARD

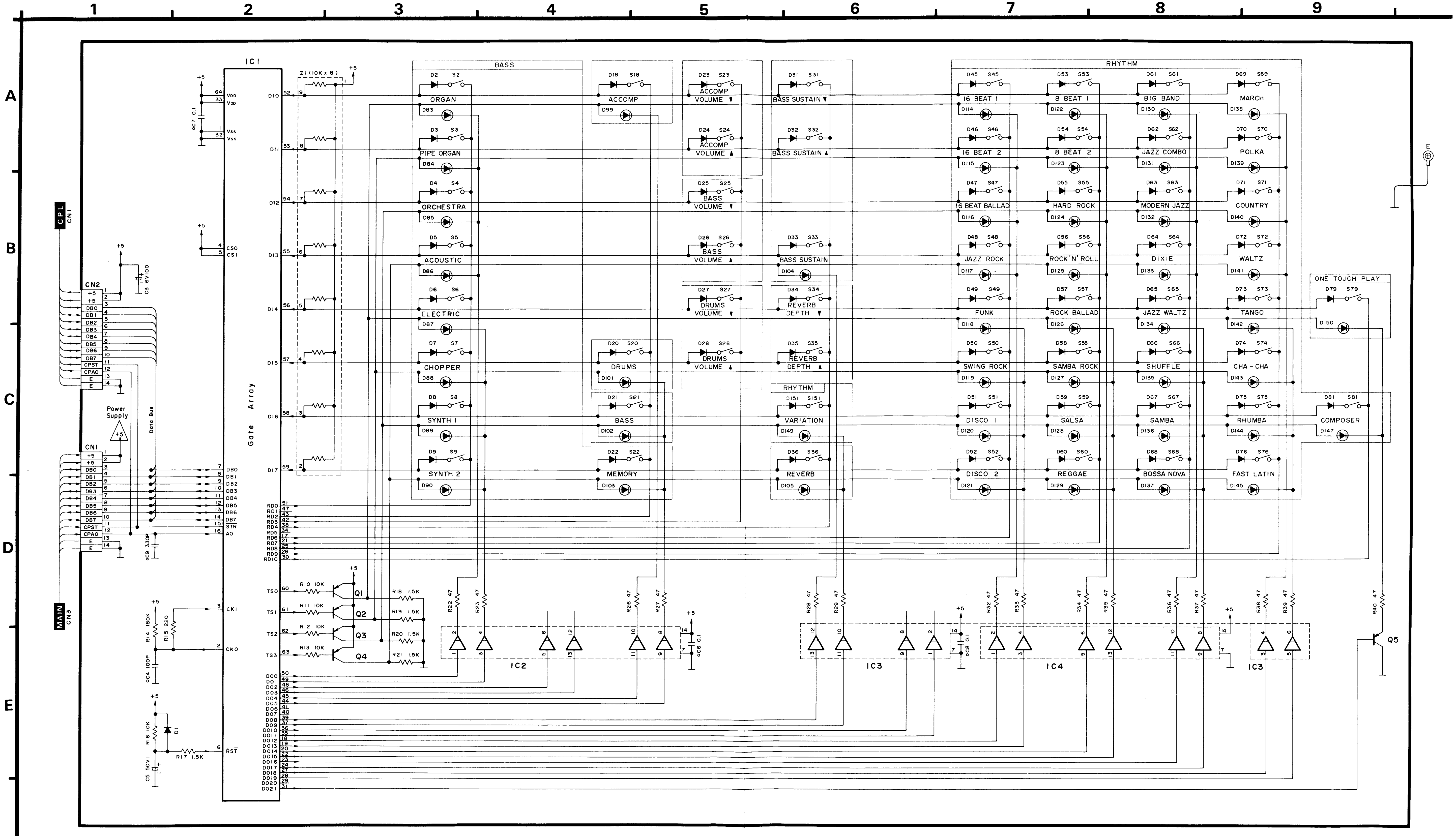
SXPG200531


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
IC1
IC2
IC3
IC4
Q1
Q2
Q3
Q4
Q5
COMPOSER
VARIATION
MEMORY
ORGAN
PIPE ORGAN
ORCHESTRA
ACOUSTIC
ELECTRIC
CHOPPER
SYNTH 1
SYNTH 2
BASS
ONE TOUCH PLAY
16 BEAT 1
8 BEAT 1
BIG BAND
MARCH
16 BEAT 2
8 BEAT 2
JAZZ COMBO
POLKA
16 BEAT BALLAD
HARD ROCK
MODERN JAZZ
COUNTRY
JAZZ ROCK
ROCK 'N' ROLL
DIXIE
WALTZ
FUNK
ROCK BALLAD
JAZZ WALTZ
TANGO
SWING ROCK
SAMBA ROCK
SHUFFLE
CHA-CHA
DISCO 1
SALSA
SAMBA
RHUMBA
DISCO 2
REGGAE
BOSSA NOVA
FAST LATIN
RHYTHM
REVERB DEPTH▼
REVERB DEPTH▲
REVERB
DRUMS VOLUME▼
DRUMS VOLUME▲
DRUMS
ACCOMP VOLUME▼
ACCOMP VOLUME▲
ACCOMP
BASS VOLUME▼
BASS VOLUME▲
BASS
BASS SUSTAIN▼
BASS SUSTAIN▲
BASS SUSTAIN
Z1 10K × 8
C9 330P
C7 0.1
C8 0.1
C6 0.1
C5 50V1
C4 100P
C3 6V100
R17 1.5K
R15 220
R14 180K
R16 10K
R12 10K
R11 10K
R10 103
R19 1.5K
R18 1.5K
R21 1.5K
R20 1.5K
R13 10K
R34 47
R35 47
R36 47
R37 47
R38 47
R39 47
R40 47
R33 47
R32 47
R22 47
R23 47
R26 47
R27 47
R28 47
R29 47
E
+5
CN1
CN2
JP1
JP2
E
E
CPAO
CPST
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
+5
+5

NOTES:

- IC'S
  - IC1: SVIGM603A121
  - IC2~4: SVIGM74LS07
- TRANSISTORS
  - Q1~5: 2SA830SB
- DIODES
  - D1~76, 79~82, 151: MA165TA5
  - D83~90, 114~145: SEL2210SM
  - D99~102, 104, 105: LN282R
  - D103, 147, 149, 150: LN382G

CPSL LOWER CONTROL PANEL LEFT CIRCUIT DIAGRAM



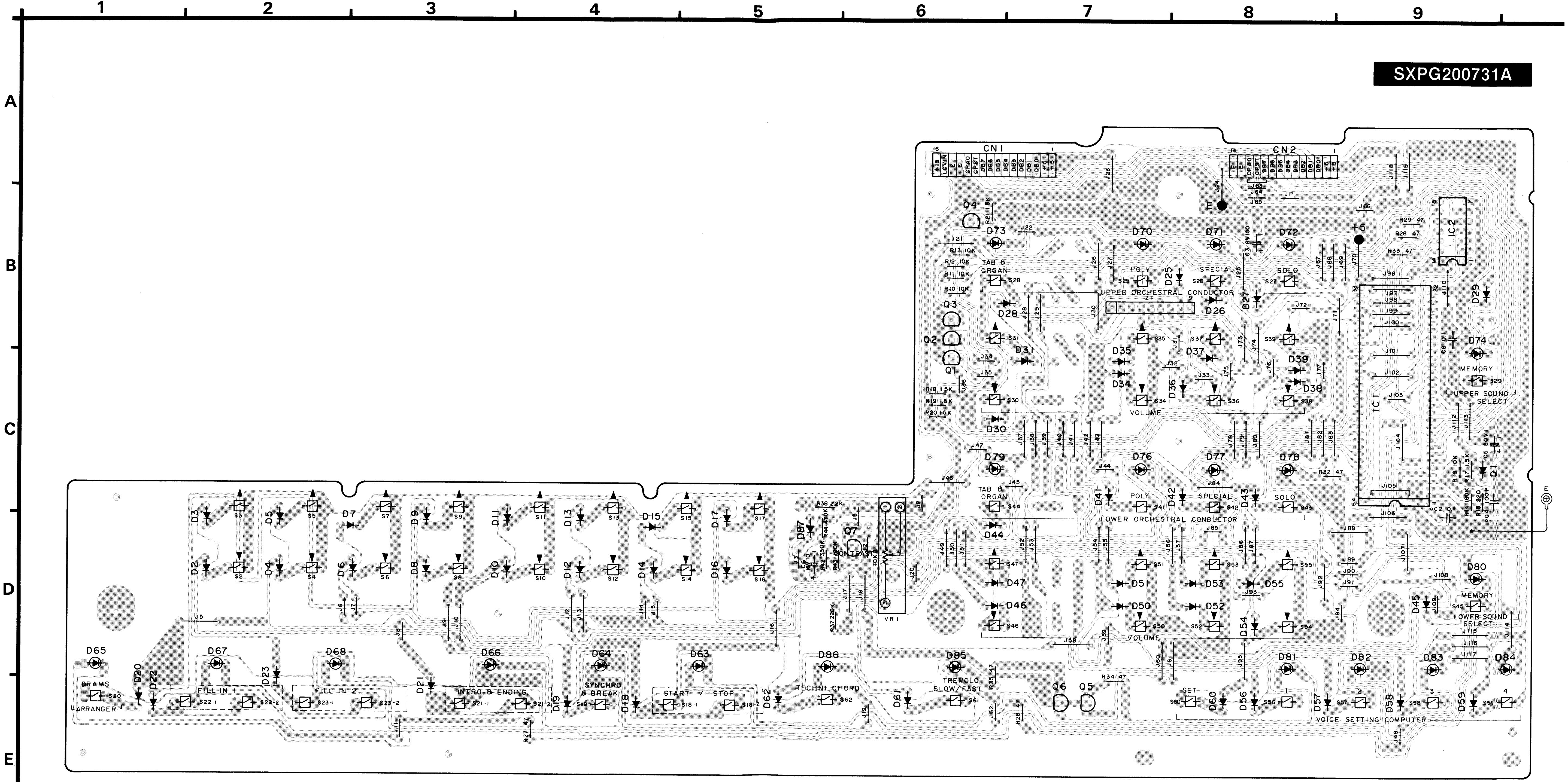
1 2 3 4 5 6 7 8 9
A B C D E F
CPL CN1
MAIN CN3
CN2
CN1
+5
DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7
CPST CPA0 E
Power Supply
Data Bus
C3 6V100
C7 0.1
C9 330P
IC1
Gate Array
VDD VSS CS0 CS1
DI0 DI1 DI2 DI3 DI4 DI5 DI6 DI7
DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 STR A0
CKI CKO RST
R14 180K
R15 220
C4 100P
R16 10K
D1
R17 1.5K
C5 50V1
RD0 RD1 RD2 RD3 RD4 RD5 RD6 RD7 RD8 RD9 RD10
TS0 TS1 TS2 TS3
R10 10K R11 10K R12 10K R13 10K
Q1 Q2 Q3 Q4
R18 1.5K R19 1.5K R20 1.5K R21 1.5K
DO0 DO1 DO2 DO3 DO4 DO5 DO6 DO7 DO8 DO9 DO10 DO11 DO12 DO13 DO14 DO15 DO16 DO17 DO18 DO19 DO20 DO21
Z1 (10K x 8)
BASS
ORGAN
PIPE ORGAN
ORCHESTRA
ACOUSTIC
ELECTRIC
CHOPPER
SYNTH 1
SYNTH 2
ACCOMP
DRUMS
BASS
MEMORY
ACCOMP VOLUME ▼
ACCOMP VOLUME ▲
BASS VOLUME ▼
BASS VOLUME ▲
DRUMS VOLUME ▼
DRUMS VOLUME ▲
BASS SUSTAIN ▼
BASS SUSTAIN ▲
BASS SUSTAIN
REVERB DEPTH ▼
REVERB DEPTH ▲
RHYTHM
VARIATION
REVERB
RHYTHM
16 BEAT 1
16 BEAT 2
16 BEAT BALLAD
JAZZ ROCK
FUNK
SWING ROCK
DISCO 1
DISCO 2
8 BEAT 1
8 BEAT 2
HARD ROCK
ROCK'N'ROLL
ROCK BALLAD
SAMBA ROCK
SALSA
REGGAE
BIG BAND
JAZZ COMBO
MODERN JAZZ
DIXIE
JAZZ WALTZ
SHUFFLE
SAMBA
BOSSA NOVA
MARCH
POLKA
COUNTRY
WALTZ
TANGO
CHA-CHA
RHUMBA
FAST LATIN
ONE TOUCH PLAY
COMPOSER
E
R22 47 R23 47 R26 47 R27 47 R28 47 R29 47 R32 47 R33 47 R34 47 R35 47 R36 47 R37 47 R38 47 R39 47 R40 47
C6 0.1
C8 0.1
IC2 IC3 IC4 IC3
Q5

NOTES:

- IC'S
  - IC1: SVIGM603A121
  - IC2~4: SVIGM74LS07
- TRANSISTORS
  - Q1~5: 2SA830SB
- DIODES
  - D1~76, 79~82, 151: MA165TA5
  - D83~90, 114~145: SEL2210SM
  - D99~102, 104, 105: LN282R
  - D103, 147, 149, 150: LN382G

CPC

UPPER CONTROL PANEL CENTER CIRCUIT BOARD

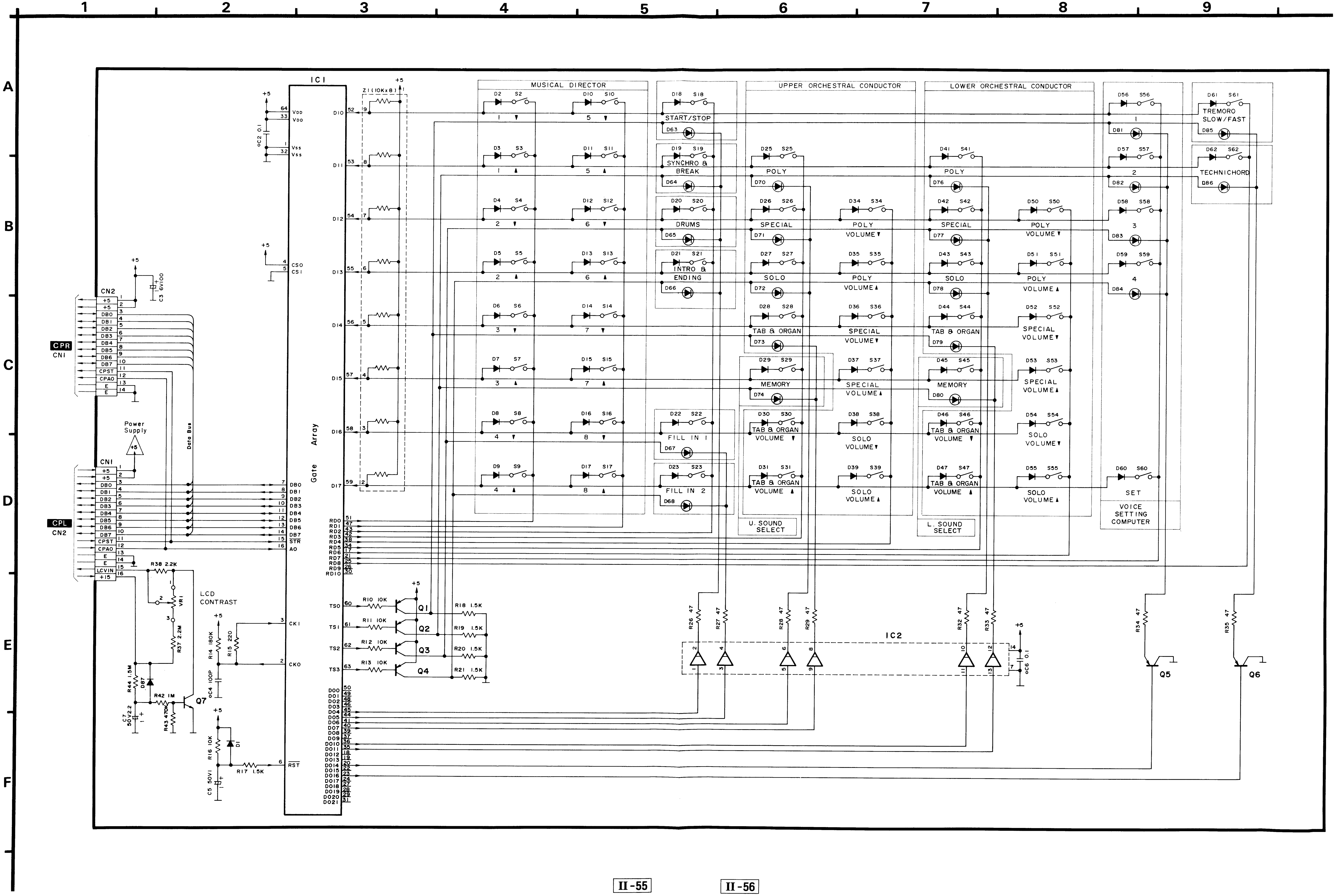


1
2
3
4
5
6
7
8
9
A
B
C
D
E
SXPG200731A
CN1
CN2
E
+5
JP
Q1
Q2
Q3
Q4
Q5
Q6
Q7
IC1
IC2
Z1
VR1
CONTRAST
D70
D71
D72
D73
D74
D76
D77
D78
D79
D80
D81
D82
D83
D84
D85
D86
D87
D63
D64
D65
D66
D67
D68
TAB & ORGAN
POLY
SPECIAL
SOLO
UPPER ORCHESTRAL CONDUCTOR
LOWER ORCHESTRAL CONDUCTOR
VOLUME
MEMORY
UPPER SOUND SELECT
LOWER SOUND SELECT
DRAMS
ARRANGER
FILL IN 1
FILL IN 2
INTRO & ENDING
SYNCHRO & BREAK
START / STOP
TECHNI CHORD
TREMOLO SLOW/FAST
SET
1
2
3
4
VOICE SETTING COMPUTER

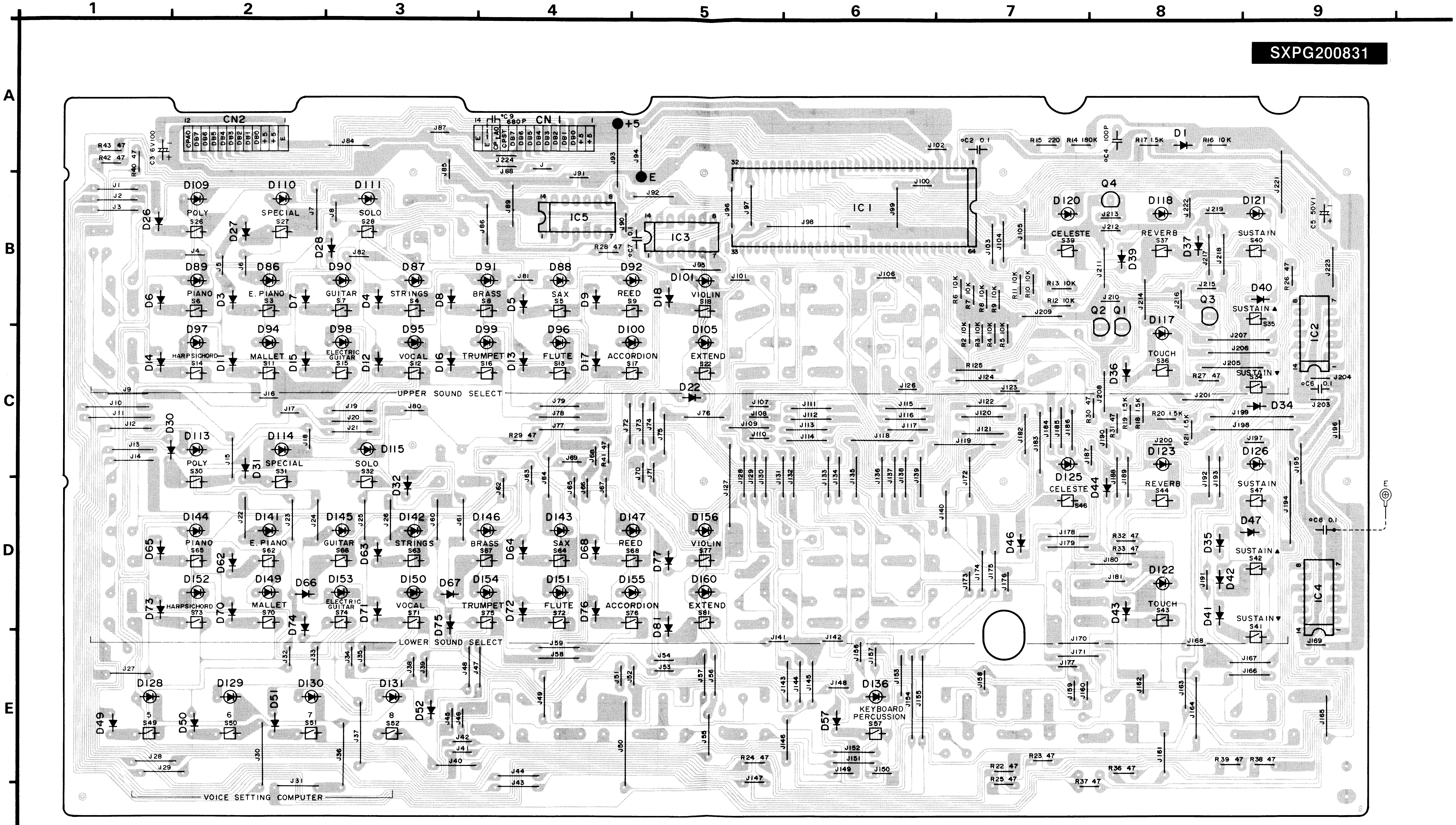
NOTES:
- IC'S
  - IC1: SVIGM603A121
  - IC2: SVIGM74LS07
- TRANSISTORS
  - Q1~6: 2SA830SB
  - Q7: 2SC2320LFG
- DIODES
  - D1~62: MA165TA5
  - D63~73, 76~79, 85, 86: LN282R
  - D74, 80~84: LN382G

CPC

UPPER CONTROL PANEL CENTER CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
IC1
Gate Array
VDD
VSS
CS0
CS1
CK1
CK0
RST
STR
A0
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
DI0
DI1
DI2
DI3
DI4
DI5
DI6
DI7
RD0
RD1
RD2
RD3
RD4
RD5
RD6
RD7
RD8
RD9
RD10
TS0
TS1
TS2
TS3
DO0
DO1
DO2
DO3
DO4
DO5
DO6
DO7
DO8
DO9
DO10
DO11
DO12
DO13
DO14
DO15
DO16
DO17
DO18
DO19
DO20
DO21
Z1 (10K×8)
+5
+15
CN1
CN2
CPR CN1
CPL CN2
CPST
CPA0
E
LCVIN
Power Supply
Data Bus
LCD CONTRAST
VR1
R10 10K
R11 10K
R12 10K
R13 10K
R14 180K
R15 220
R16 10K
R17 1.5K
R18 1.5K
R19 1.5K
R20 1.5K
R21 1.5K
R26 47
R27 47
R28 47
R29 47
R32 47
R33 47
R34 47
R35 47
R37 2.2M
R38 2.2K
R42 1M
R43 470K
R44 1.5M
C2 0.1
C3 6V100
C4 100P
C5 50V1
C6 0.1
C7 50V2.2
D1
D7
Q1
Q2
Q3
Q4
Q5
Q6
Q7
IC2
MUSICAL DIRECTOR
1 ▼
1 ▲
2 ▼
2 ▲
3 ▼
3 ▲
4 ▼
4 ▲
5 ▼
5 ▲
6 ▼
6 ▲
7 ▼
7 ▲
8 ▼
8 ▲
START/STOP
SYNCHRO & BREAK
DRUMS
INTRO & ENDING
FILL IN 1
FILL IN 2
UPPER ORCHESTRAL CONDUCTOR
LOWER ORCHESTRAL CONDUCTOR
POLY
SPECIAL
SOLO
TAB & ORGAN
MEMORY
TAB & ORGAN VOLUME ▼
TAB & ORGAN VOLUME ▲
POLY VOLUME ▼
POLY VOLUME ▲
SPECIAL VOLUME ▼
SPECIAL VOLUME ▲
SOLO VOLUME ▼
SOLO VOLUME ▲
U. SOUND SELECT
L. SOUND SELECT
1
2
3
4
SET
VOICE SETTING COMPUTER
TREMORO SLOW/FAST
TECHNICHORD

UPPER CONTROL PANEL RIGHT CIRCUIT BOARD

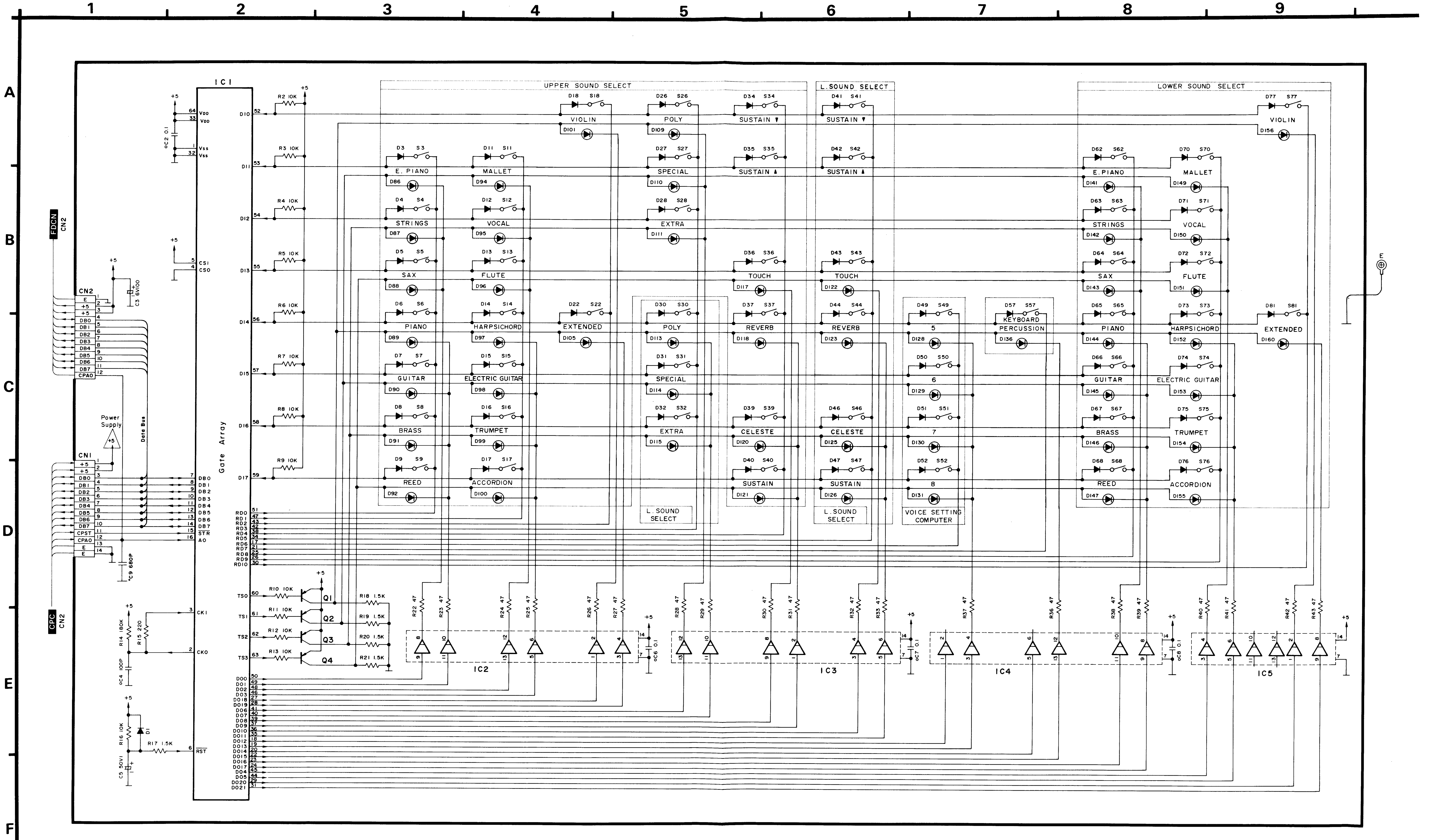

SXPG200831
CN1
CN2
IC1
IC2
IC3
IC4
IC5
Q1
Q2
Q3
Q4
+5
E
POLY
SPECIAL
SOLO
PIANO
E. PIANO
GUITAR
STRINGS
BRASS
SAX
REED
VIOLIN
HARPSICHORD
MALLET
ELECTRIC GUITAR
VOCAL
TRUMPET
FLUTE
ACCORDION
EXTEND
CELESTE
REVERB
SUSTAIN
SUSTAIN ▲
SUSTAIN ▼
TOUCH
UPPER SOUND SELECT
LOWER SOUND SELECT
KEYBOARD PERCUSSION
VOICE SETTING COMPUTER
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F

NOTES:

• IC'S	
IC1:	SVIGM603A121
IC2~5:	SVIGM74LS07
• TRANSISTORS	
Q1~4:	2SA830SB
• DIODES	
D1~81:	MA165TA5
D86~107, 141~162:	SEL2210SM
D109~126, 136:	LN282R
D128~135:	LN382G

CPR

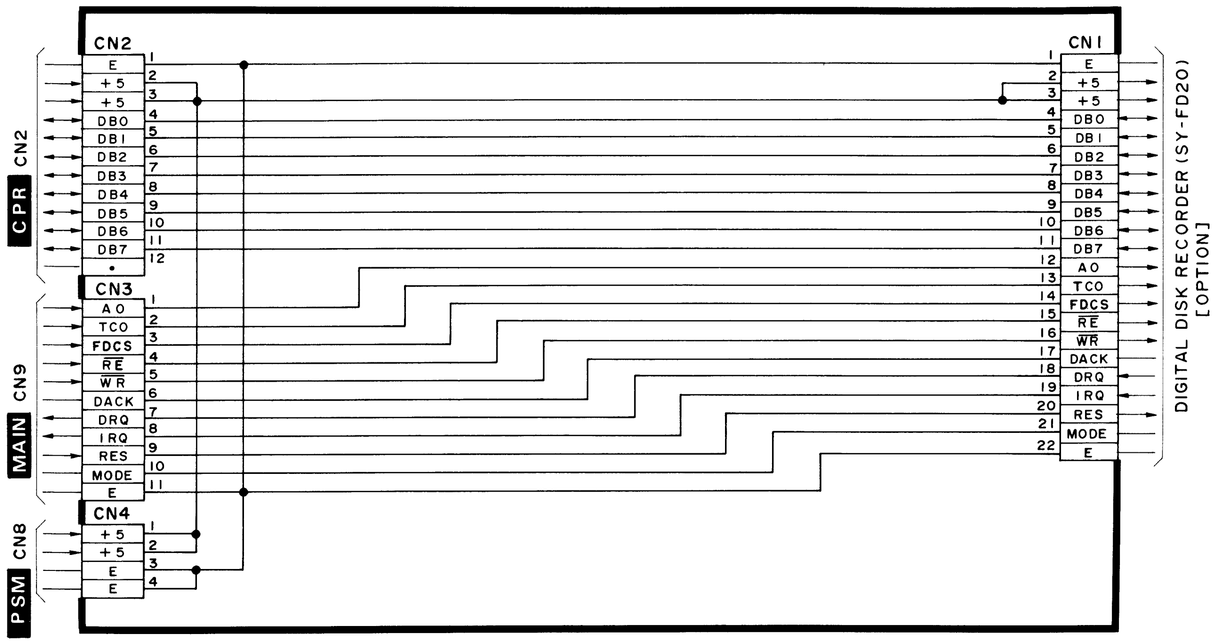
UPPER CONTROL PANEL RIGHT CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
IC1
Gate Array
FDCN CN2
CPC CN2
CN2
CN1
Power Supply
Data Bus
UPPER SOUND SELECT
L. SOUND SELECT
LOWER SOUND SELECT
VIOLIN
POLY
SUSTAIN ▼
SUSTAIN ▲
E. PIANO
MALLET
SPECIAL
STRINGS
VOCAL
EXTRA
SAX
FLUTE
TOUCH
PIANO
HARPSICHORD
EXTENDED
REVERB
KEYBOARD PERCUSSION
GUITAR
ELECTRIC GUITAR
BRASS
TRUMPET
CELESTE
REED
ACCORDION
L. SOUND SELECT
VOICE SETTING COMPUTER
Q1
Q2
Q3
Q4
IC2
IC3
IC4
IC5

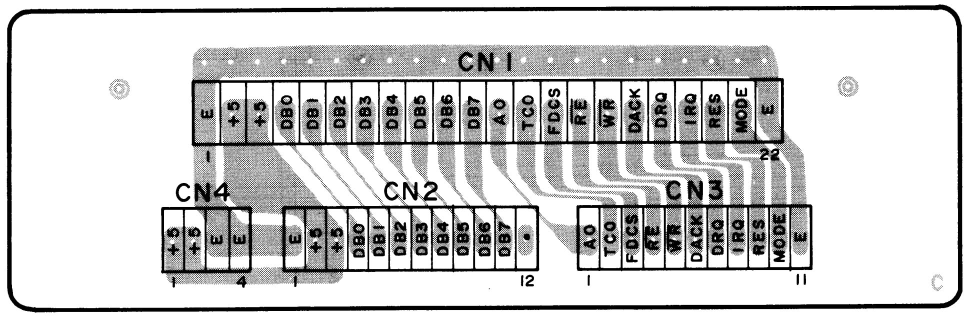
NOTES:
- IC'S
  - IC1: SVIGM603A121
  - IC2~5: SVIGM74LS07
- TRANSISTORS
  - Q1~4: 2SA830SB
- DIODES
  - D1~81: MA165TA5
  - D86~107, 141~162: SEL2210SM
  - D109~126, 136 LN282R
  - D128~135: LN382G

FDCN

FD CONNECTOR CIRCUIT


CN2
E
+5
+5
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
CN3
A0
TCO
FDCS
RE
WR
DACK
DRQ
IRQ
RES
MODE
E
CN4
+5
+5
E
E
CPR CN2
MAIN CN9
PSM CN8
CN1
DIGITAL DISK RECORDER (SY-FD20)
[OPTION]

SXPG200711D


CN1
E
+5
+5
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
A0
TCO
FDCS
RE
WR
DACK
DRQ
IRQ
RES
MODE
E
1
22
CN4
CN2
CN3
1
4
12
11

MEMO

REPLACEMENT PARTS LIST......P.C.B. and Wiring Parts

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ PRINTED CIRCUIT BOARD

	NLA	Area	Part No.	Description	Per/Set
○	NLA	EZ M XM XL MC	SXPG200181	MAIN	1
○	NLA	N	SXPG200141	MAIN	1
○	NLA	Others	SXPG2001111	MAIN	1
○	NLA		SXPG200921	MKB1	2
○	NLA		SXPG201011	MKB2	2
○	NLA	EZ M XM XL MC	SXPG200431	EJ II	1
○	NLA	Others	SXPG200411	EJ II	1
○	NLA		SXPG146021	DRV	1
○	NLA		SXPG201211	PKB	1
	NLA		SXPG103211	EXP	1
○	NLA	M XM MC	S0PG202561A	ACP	1
○	NLA	N	S0PG202511A	ACP	1
○	NLA	EK XL XR XD XS X	S0PG202531A	ACP	1
○	NLA	Others	S0PG202521A	ACP	1
○	NLA	M XM MC	SXPG201521B	PSS	1
○	NLA	Others	SXPG201511B	PSS	1
○	NLA		SXPG201511C	PSM	1
○	NLA		SXPG139271	PA	1
○	NLA		SXPG200711B	CN	1
○	NLA		SXPG201411	JACK	1
○	NLA		SXPG200711E	MVOL	1
○	NLA		SXPG200631	CPL	1
○	NLA		SXPG200711C	ESW	1
○	NLA		SXPG200531	CPSL	1
○	NLA		SXPG200731A	CPC	1
○	NLA		QSLG003AA	LCD	1
○	NLA		SXPG200831	CPR	1
○	NLA		SXPG200711D	FDCN	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	SVIGD70320GJ	16 bit Microcomputer	1
	IC2	SVIGMB621407	Gate Array	1
	IC3	SVIGD656C329	Gate Array	1
	IC4	SVIGLH701088	16 bit Microcomputer	1
○	IC5	QSIGAGN3BX0	1M bit EP ROM	1
○	IC6	QSIGAGN3AX0	1M bit EP ROM	1
	IC7, 15, 105	SVIGHM65256	256K bit Partial S RAM	3
	IC8	SVIGM5256BLL	256K bit S RAM	1
○	IC9	QSIGU3C04742	4M bit Mask ROM	1
○	IC10	M74HC245P	3-State Buffer	1
	IC11~13	SVIGM74HC244	3-State Buffer	3
○	IC14	QSIGAGN3CX0	1M bit EP ROM	1
	IC16	SVIGTLP513	Photo Coupler	1
	IC17	SVIGM74LS07	Hex Buffers (O.C.)	1
	IC18	SVIGMSM6253	A/D Converter	1
	IC19	SVIGM74H138	Decoder	1
○	IC20	M74HC139P	Decoder	1
	IC21	SVIGM74H02	Quad 2-input NOR Gates	1
	IC22, 26, 30, 34, 38	MN6635	Tone Generator LSI	5
	IC23, 27, 31, 35, 39	SVIGBA9221	12 bit D-A Converter	5
	IC24, 28, 32, 36, 40	SVIGM5238L	Operational Amplifier	5
	IC25, 29, 33, 37, 41	SVIGTC4051BP	8-channel Multiplexer	5
○	IC42	QSIGU3C04740	4M bit Mask ROM	1
○	IC43	QSIGU3C04738	4M bit Mask ROM	1
○	IC45	QSIGU3C04732	4M bit Mask ROM	1
○	IC47	QSIGU3C04730	4M bit Mask ROM	1
	IC48, 49	SVIGM74HC374	3-state D-type Flip-Flops	2
	IC50~89	SVIGM74H4066	Quad Bilateral Switches	40
	IC90~94, 96~98, 101, 104, 111	SVIGM5218L	Operational Amplifier	11
○	IC99	M74HC174P	Hex D-type Flip-Flops	1
	IC108	SVIGM74H00	Quad 2-input NAND Gates	1
	IC109	SVIGM74H32	Quad 2-input OR Gates	1
	IC110	QSIGU3C04741	4M bit Mask ROM	1
	TRANSISTORS			
	Q2~4, 16	2SC1047C		4
	DIODES			
	D1~5, 10, 11, 13, 14	MA165TA5		9
○	D12	MA4056	Zener, 5.6V	1
	OSCILLATORS			
○	X1	QSXG1B1400A	14MHz, Quartz Oscillator	1
	X2	SVQGA16MX140	16MHz, Ceramic Oscillator	1
	X3~5	SVQG49S1600T	16MHz, Quartz Oscillator	3
	COMPONENT COMBINATIONS			
	Z1, 4, 9, 10	EXBPI8472JM	4.7KΩ×8	4
	Z2	EXBPI4472JM	4.7KΩ×4	1
	Z3, 5~8	EXAMR14A1002	1KΩ/2KΩ, Ladder Network	5
	JACKS			
	JK1~3	SJSG1370A	MIDI (THRU, OUT, IN)	3
	RESISTORS			
	R1, 2	ERDS2TJ473	47KΩ	2
	R3, 4	ERDS2TJ474	470KΩ	2
	R6	ERDS2TJ221	220Ω	1
	R7	ERDS2TJ331	330Ω	1
	R9, 10	ERDS2TJ221	220Ω	2

Ref. No.	Part No.	Description	Per/Set
R11	ERDS2TJ472	4.7KΩ	1
R12, 13	ERDS2TJ221	220Ω	2
R15	ERDS2TJ103	10KΩ	1
R16	ERDS2TJ332	3.3KΩ	1
R26	ERDS2TJ472	4.7KΩ	1
R28~31	ERDS2TJ472	4.7KΩ	4
R32	ERDS2TJ331	330Ω	1
R41	ERDS2TJ154	150KΩ	1
R42, 43	ERDS2TJ101	100Ω	2
R45, 46	ERDS2TJ472	4.7KΩ	2
R52	ERDS2TJ682	6.8KΩ	1
R54	ERDS2TJ682	6.8KΩ	1
R56	ERDS2TJ103	10KΩ	1
R57, 58	ERDS2TJ472	4.7KΩ	2
R59	ERDS2TJ105	1MΩ	1
R60~62	ERDS2TJ472	4.7KΩ	3
R63, 64	ERDS2TJ473	47KΩ	2
R65, 66	ERDS2TJ472	4.7KΩ	2
R69	ERDS2TJ101	100Ω	1
R82	ERDS2TJ473	47KΩ	1
R83	ERDS2TJ472	4.7KΩ	1
R85, 86	ERDS2TJ471	470Ω	2
R87	ERDS2TJ183	18KΩ	1
R88	ERDS2TJ333	33KΩ	1
R89, 90	ER0S2TKF4700	470Ω, ±1%	2
R91, 92	ERDS2TJ471	470Ω	2
R93	ERDS2TJ333	33KΩ	1
R94	ERDS2TJ183	18KΩ	1
R95, 96	ER0S2TKF4700	470Ω, ±1%	2
R97, 98	ERDS2TJ471	470Ω	2
R99	ERDS2TJ123	12KΩ	1
R100	ER0S2TKF4700	470Ω, ±1%	1
R101, 102	ERDS2TJ472	4.7KΩ	2
R103, 104	ERDS2TJ222	2.2KΩ	2
R105, 106	ERDS2TJ472	4.7KΩ	2
R115, 116	ERDS2TJ104	100KΩ	2
R118~121	ERDS2TJ104	100KΩ	4
R123~126	ERDS2TJ225	2.2MΩ	4
R127~134	ERDS2TJ473	47KΩ	8
R135, 136	ERDS2TJ683	68KΩ	2
R137~152	ERDS2TJ473	47KΩ	16
R153	ERDS2TJ224	220KΩ	1
R154~157	ERDS2TJ334	330KΩ	4
R158	ER0S2TKF4700	470Ω, ±1%	1
R159, 160	ERDS2TJ471	470Ω	2
R161	ERDS2TJ183	18KΩ	1
R162	ERDS2TJ333	33KΩ	1
R163	ER0S2TKF4700	470Ω, ±1%	1
R164	ERDS2TJ101	100Ω	1
R165	ER0S2TKF4700	470Ω, ±1%	1
R166, 167	ERDS2TJ471	470Ω	2
R168	ERDS2TJ333	33KΩ	1
R169	ERDS2TJ183	18KΩ	1
R170	ER0S2TKF4700	470Ω, ±1%	1
R171~186	ERDS2TJ473	47KΩ	16
R187, 188	ERDS2TJ683	68KΩ	2
R193	ERDS2TJ104	100KΩ	1
R195	ERDS2TJ104	100KΩ	1
R198~200	ERDS2TJ104	100KΩ	3
R204~206	ERDS2TJ104	100KΩ	3
R210~212	ERDS2TJ104	100KΩ	3
R216~218	ERDS2TJ104	100KΩ	3
R222, 223	ERDS2TJ472	4.7KΩ	2
R228, 229 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R230, 231 ⚠	ERQ14AJ2R0P	2Ω, 1/4W, Fuse Type	2
R239	ER0S2TKF4700	470Ω, ±1%	1
R240	ERDS2TJ104	100KΩ	1
R244	ERDS2TJ103	10KΩ	1

Ref. No.	Part No.	Description	Per/Set
R245, 246	ERDS2TJ472	4.7KΩ	2
R248	ERDS2TJ472	4.7KΩ	1
R250~254	ERDS2TJ101	100Ω	5
R256~288	ERDS2TJ101	100Ω	33
R289	ERDS2TJ103	10KΩ	1
R300, 301	ERDS2TJ104	100KΩ	2
R302	ERDS2TJ222	2.2KΩ	1
R303	ERDS2TJ683	68KΩ	1

CAPACITORS

Ref. No.	Part No.	Description	Per/Set
C1, 2	ECQG1H102KZ	0.001μF	2
C3, 4	ECKR1E473ZV	0.047μF	2
C7	ECEA1HKA010	1μF, 50V	1
C8, 9	ECCR1H220J	22pF	2
C10	ECEA0JKA331	330μF, 6.3V	1
C11, 12	ECKR1E473ZV	0.047μF	2
C16, 17	ECRR1H104ZF	0.1μF	2
C18	EECF5R5U105	1F, 5.5V, Memory Back-up	1
C19	ECEA0JKA101	100μF, 6.3V	1
C20	ECCR1H470J	47pF	1
C22	ECCR1H680J	68pF	1
C23	ECRR1H104ZF	0.1μF	1
C24, 25	ECKR1E473ZV	0.047μF	2
C27, 28	ECCR1H220J	22pF	2
C29~31	ECKR1E473ZV	0.047μF	3
C32	EECF5R5U105	1F, 5.5V, Memory Back-up	1
C33	ECKR1E473ZV	0.047μF	1
C34, 35	ECSF1EE225	2.2μF, 25V	2
C36	ECCR1H221J	220pF	1
C37, 38	ECCR1H220J	22pF	2
C39	ECEA0JKA331	330μF, 6.3V	1
C40	ECRR1H104ZF	0.1μF	1
C42	ECSF1EE225	2.2μF, 25V	1
C43	ECCR1H221J	220pF	1
C44	ECEA0JKA331	330μF, 6.3V	1
C45	ECRR1H104ZF	0.1μF	1
C46	ECEA0JKA331	330μF, 6.3V	1
C47	ECSF1EE225	2.2μF, 25V	1
C48	ECSF1VE106	10μF, 35V	1
C49	ECCR1H221J	220pF	1
C50	ECEA0JKA331	330μF, 6.3V	1
C51	ECRR1H104ZF	0.1μF	1
C52	ECEA0JKA331	330μF, 6.3V	1
C53, 54	ECCR1H220J	22pF	2
C55	ECKR1E473ZV	0.047μF	1
C58~61	ECQV1H104JZ	0.1μF	4
C62	ECQG1H472KZ	0.0047μF	1
C63	ECQG1H102KZ	0.001μF	1
C64	ECQG1H472KZ	0.0047μF	1
C65	ECQG1H102KZ	0.001μF	1
C66	ECQG1H472KZ	0.0047μF	1
C67	ECQG1H102KZ	0.001μF	1
C68	ECQG1H472KZ	0.0047μF	1
C69	ECQG1H102KZ	0.001μF	1
C70	ECQG1H472KZ	0.0047μF	1
C71	ECQG1H102KZ	0.001μF	1
C72	ECQG1H472KZ	0.0047μF	1
C73	ECQG1H102KZ	0.001μF	1
C74	ECQG1H472KZ	0.0047μF	1
C75	ECQG1H102KZ	0.001μF	1
C76	ECQG1H472KZ	0.0047μF	1
C77	ECQG1H102KZ	0.001μF	1
C78	ECEA0JKA331	330μF, 6.3V	1
C79	ECSF1EE225	2.2μF, 25V	1
C80	ECKR1E473ZV	0.047μF	1
C82	ECKR1E473ZV	0.047μF	1
C84, 85	ECKR1E473ZV	0.047μF	2

Ref. No.	Part No.	Description	Per/Set
C87	ECKR1E473ZV	0.047µF	1
C88	ECCR1H470J	47pF	1
C89	ECQG1H472KZ	0.0047µF	1
C90	ECQG1H102KZ	0.001µF	1
C91	ECQG1H472KZ	0.0047µF	1
C92	ECQG1H102KZ	0.001µF	1
C93	ECQG1H472KZ	0.0047µF	1
C94	ECQG1H102KZ	0.001µF	1
C95	ECQG1H472KZ	0.0047µF	1
C96	ECQG1H102KZ	0.001µF	1
C97	ECQG1H472KZ	0.0047µF	1
C98	ECQG1H102KZ	0.001µF	1
C99	ECQG1H472KZ	0.0047µF	1
C100	ECQG1H102KZ	0.001µF	1
C101	ECQG1H472KZ	0.0047µF	1
C102	ECQG1H102KZ	0.001µF	1
C103	ECQG1H472KZ	0.0047µF	1
C104	ECQG1H102KZ	0.001µF	1
C105	ECKR1E473ZV	0.047µF	1
C107	ECKR1E473ZV	0.047µF	1
C109	ECKR1E473ZV	0.047µF	1
C111	ECKR1E473ZV	0.047µF	1
C113	ECQG1H472KZ	0.0047µF	1
C114	ECQG1H102KZ	0.001µF	1
C115	ECQG1H472KZ	0.0047µF	1
C116	ECQG1H102KZ	0.001µF	1
C117	ECQG1H472KZ	0.0047µF	1
C118	ECQG1H102KZ	0.001µF	1
C119	ECQG1H472KZ	0.0047µF	1
C120	ECQG1H102KZ	0.001µF	1
C121	ECQG1H472KZ	0.0047µF	1
C122	ECQG1H102KZ	0.001µF	1
C123	ECQG1H472KZ	0.0047µF	1
C124	ECQG1H102KZ	0.001µF	1
C125	ECQG1H472KZ	0.0047µF	1
C126	ECQG1H102KZ	0.001µF	1
C127	ECQG1H472KZ	0.0047µF	1
C128	ECQG1H102KZ	0.001µF	1
C129	ECKR1E473ZV	0.047µF	1
C131	ECKR1E473ZV	0.047µF	1
C133	ECKR1E473ZV	0.047µF	1
C135, 136	ECKR1E473ZV	0.047µF	2
C137	ECSF1VE106	10µF, 35V	1
C138	ECQV1H104JZ	0.1µF	1
C140, 141	ECQV1H104JZ	0.1µF	2
C142	ECCR1H471J	470pF	1
C143	ECCR1H470J	47pF	1
C144	ECCR1H471J	470pF	1
C145	ECCR1H470J	47pF	1
C146, 147	ECSF1EE225	2.2µF, 25V	2
C149	ECCR1H221J	220pF	1
C150, 151	ECEA0JKA331	330µF, 6.3V	2
C152, 153	ECCR1H220J	22pF	2
C154	ECSF1EE225	2.2µF, 25V	1
C155	ECCR1H221J	220pF	1
C156, 157	ECEA0JKA331	330µF, 6.3V	2
C158	ECQG1H472KZ	0.0047µF	1
C159	ECQG1H102KZ	0.001µF	1
C160	ECQG1H472KZ	0.0047µF	1
C161	ECQG1H102KZ	0.001µF	1
C162	ECQG1H472KZ	0.0047µF	1
C163	ECQG1H102KZ	0.001µF	1
C164	ECQG1H472KZ	0.0047µF	1
C165	ECQG1H102KZ	0.001µF	1
C166	ECQG1H472KZ	0.0047µF	1
C167	ECQG1H102KZ	0.001µF	1
C168	ECQG1H472KZ	0.0047µF	1
C169	ECQG1H102KZ	0.001µF	1
C170	ECQG1H472KZ	0.0047µF	1
C171	ECQG1H102KZ	0.001µF	1
C172	ECQG1H472KZ	0.0047µF	1
C173	ECQG1H102KZ	0.001µF	1
C174	ECKR1E473ZV	0.047µF	1
C176	ECKR1E473ZV	0.047µF	1
C178	ECKR1E473ZV	0.047µF	1
C180	ECKR1E473ZV	0.047µF	1
C181	ECQG1H472KZ	0.0047µF	1
C182	ECQG1H102KZ	0.001µF	1
C183	ECQG1H472KZ	0.0047µF	1
C184	ECQG1H102KZ	0.001µF	1
C185	ECQG1H472KZ	0.0047µF	1
C186	ECQG1H102KZ	0.001µF	1
C188	ECQG1H472KZ	0.0047µF	1
C189	ECQG1H102KZ	0.001µF	1
C190	ECQG1H472KZ	0.0047µF	1
C191	ECQG1H102KZ	0.001µF	1
C192	ECQG1H472KZ	0.0047µF	1
C193	ECQG1H102KZ	0.001µF	1
C194	ECQG1H472KZ	0.0047µF	1
C195	ECQG1H102KZ	0.001µF	1
C196	ECQG1H472KZ	0.0047µF	1
C197	ECQG1H102KZ	0.001µF	1
C198	ECKR1E473ZV	0.047µF	1
C200	ECKR1E473ZV	0.047µF	1
C202	ECKR1E473ZV	0.047µF	1
C204	ECKR1E473ZV	0.047µF	1
C205	ECSF1EE225	2.2µF, 25V	1
C206	ECQG1H152KZ	0.0015µF	1
C210	ECCR1H470J	47pF	1
C211	ECQG1H152KZ	0.0015µF	1
C215	ECCR1H470J	47pF	1
C216	ECQG1H332KZ	0.0033µF	1
C220	ECCR1H470J	47pF	1
C221	ECQG1H152KZ	0.0015µF	1
C225	ECCR1H470J	47pF	1
C226	ECQG1H152KZ	0.0015µF	1
C230	ECEA0JKA101	100µF, 6.3V	1
C234	ECEA0JKA331	330µF, 6.3V	1
C235, 236	ECEA1CKA101	100µF, 16V	2
C237	ECEA0JKA331	330µF, 6.3V	1
C239	ECQV1H104JZ	0.1µF	1
C241	ECQV1H104JZ	0.1µF	1
C245	ECCR1H101J	100pF	1
C246	ECQV1H474JZ	0.47µF	1
C247	ECKR1E473ZV	0.047µF	1
C248	ECSF1EE225	2.2µF, 25V	1
C250, 251	ECKR1E473ZV	0.047µF	2
C254	ECSF1EE225	2.2µF, 25V	1
C256	ECSF1EE225	2.2µF, 25V	1
C257	ECKR1E473ZV	0.047µF	1
C258	ECRR1H104ZF	0.1µF	1
C259	ECSF1EE225	2.2µF, 25V	1
C261	ECKR1E473ZV	0.047µF	1
C262	ECRR1H104ZF	0.1µF	1
C265~273	ECKR1E473ZV	0.047µF	9
C276, 277	ECKR1E473ZV	0.047µF	2
C279	ECKR1E473ZV	0.047µF	1
C281~284	ECKR1E473ZV	0.047µF	4
C285	ECQG1H102KZ	0.001µF	1
C286~288	ECKR1E473ZV	0.047µF	3
C289	ECCR1H331J	330pF	1
C291	ECKR1E473ZV	0.047µF	1
C292	ECRR1H104ZF	0.1µF	1
C293	ECSF1EE225	2.2µF, 25V	1
C294	ECRR1H104ZF	0.1µF	1
C295, 296	ECKR1E473ZV	0.047µF	2

	Ref. No.	Part No.	Description	Per/Set
	C297, 298	ECRR1H104ZF	0.1μF	2
	C300, 301	ECCR1H101J	100pF	2
	C302, 303	ECQG1H222KZ	0.0022μF	2
	C304, 305	ECKR1E473ZV	0.047μF	2

MKB 1 MANUAL KEYBOARD 1 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
	IC1	MN50020PGV	Gate Array	1
	IC2	MN1231	1K bit ROM	1
		DIODES		
S	D1~74	MA162A	MA150IR (SUB. Part)	74
		OSCILLATOR		
	X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
		COMPONENT COMBINATION		
	Z1	EXBPI8472JM	4.7KΩ×8	1
		RESISTORS		
	R1	ERDS2TJ222	2.2KΩ	1
	R2	ERDS2TJ472	4.7KΩ	1
		CAPACITOR		
	C1	ECRR1H104ZF	0.1μF	1

MKB 2 MANUAL KEYBOARD 2 CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		DIODES		
S	D1~24	MA162A	MA150IR (SUB. Part)	24

EJ II EFFECT, MIXING & JACK II CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
	IC1	SVIGTC4051BP	8-channel Multiplexer	1
	IC2	SVIG65002018	Gate Array	1
○	IC3	M66240P	PWM Generator	1
	IC4, 5, 42	SVIGTC4053BP	2-channel Multiplexer	3
	IC6~8, 15, 19, 21, 24~28, 33, 38~40, 43~50, 52, 53	SVIGM5218L	Operational Amplifier	25
	IC9, 16, 20, 22, 36, 37	SVIGUPC1252H	VCA	6
	IC10, 23	SVIGUPC1253H	RMS Level Sensor	2
	IC11, 13, 17, 29, 30	SVIGMSM4011	2-input NAND Gate	5
	IC12, 14, 18	MN3004	BBD (512 stages)	3
	IC31, 32	MN3006	BBD (128 stages)	2
	IC34, 35	SVIGBA6110	VCA	2
	IC41	SVIGLM1894N	Dynamic Noise Reduction	1
	IC51	SVIGM74H04	Hex Inverters	1
		TRANSISTORS		
S	Q1, 3, 4, 7, 8, 12, 13, 20~26, 28, 30	2SC2320LFG	2SC1310FG (SUB. Part)	16
S	Q2, 5, 6, 9, 10, 11, 29	2SA1015-GR	2SA933STRS (SUB. Part)	6
	Q14, 16	2SC3940AR		2
	Q15, 17	2SA1534AR		2
	Q18, 19	2SJ105GR	FET	2
		DIODES		
	D1	MA4062	Zener, 6.2V	1
	D2	SVDGRK14S	Diode	1
	D3~21	MA165TA5		19
		OSCILLATORS		
	X1	SVQG49S1200T	12MHz, Quartz Oscillator	1
		COILS		
	L1, 2 EZ XL M MC XM	SLQG15W34DPQ	Coil	2
		JACKS		
	JK1~4	SJJG400A	LINE OUT, AUX IN	4
		SEMI-FIXED RESISTORS		
	VR1, 2	EVND4AA00B24	20KΩ B, BBD Bias	2
	VR3	EVND4AA00B14	10KΩ B, Offset Adj.	1
		RESISTORS		
	R1~6	ERDS2TJ102	1KΩ	6
	R7	ERDS2TJ683	68KΩ	1
	R8	ERDS2TJ101	100Ω	1
	R9~13	ERDS2TJ682	6.8KΩ	5
	R14	ERDS2TJ563	56KΩ	1
	R15	ERDS2TJ682	6.8KΩ	1
	R16	ERDS2TJ563	56KΩ	1
	R17	ERDS2TJ682	6.8KΩ	1
	R18	ERDS2TJ563	56KΩ	1
	R19	ERDS2TJ103	10KΩ	1
	R20	ERDS2TJ563	56KΩ	1
	R21	ERDS2TJ103	10KΩ	1
	R22	ERDS2TJ563	56KΩ	1
	R23	ERDS2TJ103	10KΩ	1
	R24, 25	ERDS2TJ332	3.3KΩ	2
	R26, 27	ERDS2TJ102	1KΩ	2
	R28	ERDS2TJ332	3.3KΩ	1
	R29~31	ERDS2TJ103	10KΩ	3
	R32~34	ERDS2TJ104	100KΩ	3
	R35	ERDS2TJ331	330Ω	1
	R36	ERDS2TJ153	15KΩ	1
	R37	ERDS2TJ331	330Ω	1
	R38	ERDS2TJ153	15KΩ	1
	R39	ERDS2TJ331	330Ω	1
	R40	ERDS2TJ153	15KΩ	1
	R41	ERDS2TJ104	100KΩ	1

Ref. No.	Part No.	Description	Per/Set
R42	ERDS2TJ102	1KΩ	1
R43	ERDS2TJ473	47KΩ	1
R44~46	ERDS2TJ274	270KΩ	3
R47	ERDS2TJ332	3.3KΩ	1
R48	ERDS2TJ472	4.7KΩ	1
R49	ERDS2TJ332	3.3KΩ	1
R50, 51	ERDS2TJ223	22KΩ	2
R52	ERDS2TJ154	150KΩ	1
R53	ERDS2TJ474	470KΩ	1
R54	ERDS2TJ100	10Ω	1
R55	ERDS2TJ101	100Ω	1
R56	ERDS2TJ105	1MΩ	1
R58	ERDS2TJ473	47KΩ	1
R59	ERDS2TJ154	150KΩ	1
R60, 61	ERDS2TJ332	3.3KΩ	2
R62, 63	ERDS2TJ154	150KΩ	2
R64, 65	ERDS2TJ332	3.3KΩ	2
R66, 67	ERDS2TJ154	150KΩ	2
R68, 69	ERDS2TJ332	3.3KΩ	2
R70, 71	ERDS2TJ154	150KΩ	2
R72	ERDS2TJ153	15KΩ	1
R73	ERDS2TJ103	10KΩ	1
R74	ERDS2TJ333	33KΩ	1
R75 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R76	ERDS2TJ154	150KΩ	1
R77	ERDS2TJ153	15KΩ	1
R78	ERDS2TJ103	10KΩ	1
R79	ERDS2TJ333	33KΩ	1
R80 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R81	ERDS2TJ683	68KΩ	1
R82	ERDS2TJ333	33KΩ	1
R83	ERDS2TJ154	150KΩ	1
R84	ERDS2TJ332	3.3KΩ	1
R85	ERDS2TJ472	4.7KΩ	1
R86	ERDS2TJ103	10KΩ	1
R87	ERDS2TJ153	15KΩ	1
R88	ERDS2TJ103	10KΩ	1
R89	ERDS2TJ154	150KΩ	1
R90 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R91	ERDS2TJ333	33KΩ	1
R92	ERDS2TJ683	68KΩ	1
R93	ERDS2TJ333	33KΩ	1
R94	ERDS2TJ472	4.7KΩ	1
R95~97	ERDS2TJ473	47KΩ	3
R98	ERDS2TJ472	4.7KΩ	1
R99~101	ERDS2TJ473	47KΩ	3
R102	ERDS2TJ472	4.7KΩ	1
R103~105	ERDS2TJ473	47KΩ	3
R106	ERDS2TJ103	10KΩ	1
R107	ERDS2TJ224	220KΩ	1
R108	ERDS2TJ154	150KΩ	1
R109	ERDS2TJ224	220KΩ	1
R110	ERDS2TJ474	470KΩ	1
R111	ERDS2TJ104	100KΩ	1
R112, 113	ERDS2TJ224	220KΩ	2
R114	ERDS2TJ104	100KΩ	1
R115	ERDS2TJ224	220KΩ	1
R116	ERDS2TJ154	150KΩ	1
R117	ERDS2TJ224	220KΩ	1
R118	ERDS2TJ474	470KΩ	1
R119	ERDS2TJ224	220KΩ	1
R121, 122	ERDS2TJ224	220KΩ	2
R127	ERDS2TJ334	330KΩ	1
R128~130	ERDS2TJ104	100KΩ	3
R131	ERDS2TJ563	56KΩ	1
R132, 133	ERDS2TJ472	4.7KΩ	2
R134	ERDS2TJ331	330Ω	1
R135	ERDS2TJ152	1.5KΩ	1
R136	ERDS2TJ102	1KΩ	1
R137	ERDS2TJ331	330Ω	1
R138	ERDS2TJ223	22KΩ	1
R139	ERDS2TJ333	33KΩ	1
R140	ERDS2TJ223	22KΩ	1
R141	ERDS2TJ103	10KΩ	1
R142	ERDS2TJ223	22KΩ	1
R143	ERDS2TJ333	33KΩ	1
R144	ERDS2TJ223	22KΩ	1
R145	ERDS2TJ103	10KΩ	1
R146, 147	ERDS2TJ683	68KΩ	2
R149	ERDS2TJ222	2.2KΩ	1
R150	ERDS2TJ101	100Ω	1
R151, 152	ERDS2TJ223	22KΩ	2
R153	ERDS2TJ101	100Ω	1
R154	ERDS2TJ222	2.2KΩ	1
R156	ERDS2TJ332	3.3KΩ	1
R157	ERDS2TJ472	4.7KΩ	1
R158	ERDS2TJ332	3.3KΩ	1
R159	ERDS2TJ102	1KΩ	1
R160	ERDS2TJ332	3.3KΩ	1
R161	ERDS2TJ472	4.7KΩ	1
R162, 163	ERDS2TJ104	100KΩ	2
R164	ERDS2TJ393	39KΩ	1
R165	ERDS2TJ223	22KΩ	1
R166	ERDS2TJ333	33KΩ	1
R167	ERDS2TJ103	10KΩ	1
R168, 169	ERDS2TJ104	100KΩ	2
R170, 171	ERDS2TJ154	150KΩ	2
R172	ERDS2TJ333	33KΩ	1
R173, 174	ERDS2TJ683	68KΩ	2
R175	ERDS2TJ154	150KΩ	1
R177, 178	ERDS2TJ104	100KΩ	2
R179	ERDS2TJ333	33KΩ	1
R180	ERDS2TJ223	22KΩ	1
R181	ERDS2TJ273	27KΩ	1
R182	ERDS2TJ103	10KΩ	1
R183	ERDS2TJ104	100KΩ	1
R184, 185	ERDS2TJ154	150KΩ	2
R186	ERDS2TJ104	100KΩ	1
R187	ERDS2TJ333	33KΩ	1
R188, 189	ERDS2TJ153	15KΩ	2
R190	ERDS2TJ333	33KΩ	1
R191, 192	ERDS2TJ472	4.7KΩ	2
R193~196	ERDS2TJ100	10Ω	4
R197, 198	ERDS2TJ472	4.7KΩ	2
R199	ERDS2TJ104	100KΩ	1
R200	ERDS2TJ473	47KΩ	1
R201	ERDS2TJ223	22KΩ	1
R202	ERDS2TJ154	150KΩ	1
R203, 204	ERDS2TJ332	3.3KΩ	2
R205	ERDS2TJ154	150KΩ	1
R206, 207	ERDS2TJ473	47KΩ	2
R208, 209	ERDS2TJ223	22KΩ	2
R210	ERDS2TJ154	150KΩ	1
R211	ERDS2TJ153	15KΩ	1
R212	ERDS2TJ103	10KΩ	1
R213	ERDS2TJ333	33KΩ	1
R214 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R215~219	ERDS2TJ333	33KΩ	5
R220 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	1
R221	ERDS2TJ154	150KΩ	1
R222	ERDS2TJ153	15KΩ	1
R223	ERDS2TJ103	10KΩ	1
R224	ERDS2TJ154	150KΩ	1
R225, 226	ERDS2TJ332	3.3KΩ	2
R227	ERDS2TJ154	150KΩ	1
R228	ERDS2TJ223	22KΩ	1

Ref. No.	Part No.	Description	Per/Set
R229	ERDS2TJ682	6.8KΩ	1
R230~234	ERDS2TJ472	4.7KΩ	5
R235, 236	ERDS2TJ102	1KΩ	2
R237	ERDS2TJ104	100KΩ	1
R238	ERDS2TJ473	47KΩ	1
R239	ERDS2TJ103	10KΩ	1
R240	ERDS2TJ104	100KΩ	1
R241, 242	ERDS2TJ102	1KΩ	2
R243	ERDS2TJ103	10KΩ	1
R244	ERDS2TJ473	47KΩ	1
R245	ERDS2TJ333	33KΩ	1
R246, 247	ERDS2TJ473	47KΩ	2
R248	ERDS2TJ333	33KΩ	1
R249	ERDS2TJ473	47KΩ	1
R250	ERDS2TJ333	33KΩ	1
R251	ERDS2TJ332	3.3KΩ	1
R252	ERDS2TJ472	4.7KΩ	1
R253	ERDS2TJ103	10KΩ	1
R254	ERDS2TJ332	3.3KΩ	1
R255	ERDS2TJ472	4.7KΩ	1
R256	ERDS2TJ103	10KΩ	1
R257	ERDS2TJ332	3.3KΩ	1
R258	ERDS2TJ472	4.7KΩ	1
R259	ERDS2TJ332	3.3KΩ	1
R260	ERDS2TJ154	150KΩ	1
R261	ERDS2TJ105	1MΩ	1
R262	ERDS2TJ100	10Ω	1
R263	ERDS2TJ101	100Ω	1
R264	ERDS2TJ474	470KΩ	1
R266	ERDS2TJ222	2.2KΩ	1
R267	ERDS2TJ332	3.3KΩ	1
R268, 269 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R270, 271	ERDS2TJ102	1KΩ	2
R272, 273	ERDS2TJ473	47KΩ	2
R275	ERDS2TJ223	22KΩ	1
R276	ERDS2TJ102	1KΩ	1
R277	ERDS2TJ221	220Ω	1
R278	ERDS2TJ222	2.2KΩ	1
R279	ERDS2TJ102	1KΩ	1
R280	ERDS2TJ473	47KΩ	1
R281	ERDS2TJ102	1KΩ	1
R282	ERDS2TJ222	2.2KΩ	1
R283, 284	ERDS2TJ103	10KΩ	2
R285	ERDS2TJ472	4.7KΩ	1
R286	ERDS2TJ471	470Ω	1
R287	ERDS2TJ334	330KΩ	1
R288	ERDS2TJ473	47KΩ	1
R289, 290	ERDS2TJ224	220KΩ	2
R291	ERDS2TJ473	47KΩ	1
R292, 293	ERDS2TJ472	4.7KΩ	2
R294	ERDS2TJ474	470KΩ	1
R295	ERDS2TJ472	4.7KΩ	1
R296, 297	ERDS2TJ104	100KΩ	2
R298	ERDS2TJ472	4.7KΩ	1
R299	ERDS2TJ102	1KΩ	1
R300	ERDS2TJ103	10KΩ	1
R301	ERDS2TJ103	10KΩ	1
R302	ERDS2TJ154	150KΩ	1
R303	ERDS2TJ224	220KΩ	1
R304, 305	ERDS2TJ473	47KΩ	2
R306 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	1
R307, 308	ERDS2TJ222	2.2KΩ	2
R309	ERDS2TJ101	100Ω	1
R310	ERDS2TJ103	10KΩ	1
R311	ERDS2TJ472	4.7KΩ	1
R312	ERDS2TJ102	1KΩ	1
R319	ERDS2TJ102	1KΩ	1
R320, 321	ERDS2TJ333	33KΩ	2

Ref. No.	Part No.	Description	Per/Set
R322	ERDS2TJ105	1MΩ	1
R323	ERDS2TJ333	33KΩ	1
R324, 325	ERDS2TJ222	2.2KΩ	2
R326	ERDS2TJ152	1.5KΩ	1
R327	ERDS2TJ151	150Ω	1
R328	ERDS2TJ221	220Ω	1
R329, 330	ERDS2TJ333	33KΩ	2
R331	ERDS2TJ102	1KΩ	1
R332, 333	ERDS2TJ333	33KΩ	2
R334	ERDS2TJ102	1KΩ	1
R335, 336	ERDS2TJ333	33KΩ	2
R337	ERDS2TJ471	470Ω	1
R338, 339	ERDS2TJ333	33KΩ	2
R340	ERDS2TJ471	470Ω	1
R341, 342	ERDS2TJ333	33KΩ	2
R343	ERDS2TJ471	470Ω	1
R344, 345	ERDS2TJ333	33KΩ	2
R346	ERDS2TJ102	1KΩ	1
R347, 348	ERDS2TJ333	33KΩ	2
R349~351	ERDS2TJ102	1KΩ	3
R352	ERDS2TJ105	1MΩ	1
R360	ERDS2TJ822	8.2KΩ	1
CAPACITORS			
C5, 6	ECEA1HKN010	1μF, 50V	2
C8, 9	ECQG1H332KZ	0.0033μF	2
C10~12	ECQG1H472KZ	0.0047μF	3
C13, 14	ECCR1H470J	47pF	2
C15~17	ECCR1H680J	68pF	3
C18, 19	ECQG1H332KZ	0.0033μF	2
C20, 21	ECQB1H223JZ	0.022μF	2
C22	ECQG1H682KZ	0.0068μF	1
C23~25	ECEA1HKA2R2	2.2μF, 50V	3
C26	ECEA1CKA100	10μF, 16V	1
C27~29	ECEA1HKA2R2	2.2μF, 50V	3
C30	ECEA1HKN010	1μF, 50V	1
C31	ECQG1H472KZ	0.0047μF	1
C32	ECQV1H104JZ	0.1μF	1
C33	ECEA1HKA010	1μF, 50V	1
C34	ECEA1CKA100	10μF, 16V	1
C35~41	ECCR1H101J	100pF	7
C42	ECCR1H681J	680pF	1
C43, 44	ECEA1CKA470	47μF, 16V	2
C45	ECCR1H681J	680pF	1
C46, 47	ECCR1H101J	100pF	2
C48	ECQG1H222KZ	0.0022μF	1
C49	ECCR1H681J	680pF	1
C50	ECEA1CKA470	47μF, 16V	1
C51	ECQG1H222KZ	0.0022μF	1
C52, 53	ECCR1H101J	100pF	2
C54, 55	ECQG1H222KZ	0.0022μF	2
C56~58	ECCR1H470J	47pF	3
C59	ECEA1HKA010	1μF, 50V	1
C60	ECEA1CKA470	47μF, 16V	1
C61	ECQG1H682KZ	0.0068μF	1
C62	ECQV1H104JZ	0.1μF	1
C63	ECQG1H102KZ	0.001μF	1
C64	ECQG1H332KZ	0.0033μF	1
C65	ECEA1CKA100	10μF, 16V	1
C66	ECEA1HKA010	1μF, 50V	1
C67	ECEA1CKA470	47μF, 16V	1
C68	ECQG1H472KZ	0.0047μF	1
C69	ECEA1CKA100	10μF, 16V	1
C70	ECQG1H472KZ	0.0047μF	1
C71	ECEA1CKA100	10μF, 16V	1
C72	ECQG1H222KZ	0.0022μF	1
C73	ECCR1H151J	150pF	1

Ref. No.	Part No.	Description	Per/Set
C74	ECQG1H222KZ	0.0022μF	1
C75	ECCR1H151J	150pF	1
C76, 77	ECEA1HKN010	1μF, 50V	2
C80	ECCR1H221J	220pF	1
C81	ECCR1H470J	47pF	1
C82, 83	ECEA1HKN010	1μF, 50V	2
C84	ECQV1H104JZ	0.1μF	1
C85	ECQV1H154JZ	0.15μF	1
C86	ECEA1HKN010	1μF, 50V	1
C87	ECQV1H104JZ	0.1μF	1
C88	ECQV1H473JZ	0.047μF	1
C89	ECEA1HKA010	1μF, 50V	1
C90, 91	ECCR1H101J	100pF	2
C92	ECEA1HKA010	1μF, 50V	1
C93	ECQG1H102KZ	0.001μF	1
C94	ECEA1CKA470	47μF, 16V	1
C95	ECQG1H102KZ	0.001μF	1
C96, 97	ECCR1H221J	220pF	2
C98	ECQG1H102KZ	0.001μF	1
C99	ECEA1CKA470	47μF, 16V	1
C100	ECQG1H472KZ	0.0047μF	1
C101, 102	ECCR1H101J	100pF	2
C103	ECEA1CKA100	10μF, 16V	1
C104	ECEA1HKA010	1μF, 50V	1
C105, 106	ECQG1H472KZ	0.0047μF	2
C107	ECCR1H681J	680pF	1
C110	ECCR1H101J	100pF	1
C111	ECQG1H152KZ	0.0015μF	1
C112	ECCR1H101J	100pF	1
C113	ECQG1H152KZ	0.0015μF	1
C114	ECQV1H334JZ	0.33μF	1
C115	ECQG1H472KZ	0.0047μF	1
C116	ECQV1H104JZ	0.1μF	1
C117	ECEA1CKA100	10μF, 16V	1
C118	ECKR1E473ZV	0.047μF	1
C119	ECEA0JKA101	100μF, 6.3V	1
C120, 121	ECEA1CKA100	10μF, 16V	2
C122	ECQM1H473KV	0.047μF	1
C125	ECQM1H473KV	0.047μF	1
C128	ECKR1E473ZV	0.047μF	1
C129	ECEA0JKA101	100μF, 6.3V	1
C130, 131	ECKR1E473ZV	0.047μF	2
C132	ECEA1CKA470	47μF, 16V	1
C133	ECEA1EKA4R7	4.7μF, 25V	1
C134	ECEA1CKA470	47μF, 16V	1
C135	ECEA1EKA4R7	4.7μF, 25V	1
C136	ECKR1E473ZV	0.047μF	1
C139	ECKR1E473ZV	0.047μF	1
C142, 143	ECKR1E473ZV	0.047μF	2
C145	ECEA1HKA010	1μF, 50V	1
C146	ECEA1CKA100	10μF, 16V	1
C147	ECEA1HKA010	1μF, 50V	1
C148	ECEA1CKA100	10μF, 16V	1
C149	ECKR1E473ZV	0.047μF	1
C150	ECEA1EKA4R7	4.7μF, 25V	1
C151	ECEA1HKN010	1μF, 50V	1
C152, 153	ECCR1H220J	22pF	2
C154~156	ECEA1HKN010	1μF, 50V	3
C157	ECCR1H101J	100pF	1
C158	ECEA1HKN010	1μF, 50V	1
C159	ECCR1H331J	330pF	1
C160	ECKR1E473ZV	0.047μF	1
C161	ECCR1H331J	330pF	1
C162	ECKR1E473ZV	0.047μF	1
C163, 164	ECCR1H331J	330pF	2
C165, 166	ECCR1H220J	22pF	2
C167	ECQG1H222KZ	0.0022μF	1
C168	ECCR1H471J	470pF	1

Ref. No.	Part No.	Description	Per/Set
C169	ECCR1H331J	330pF	1
C170	ECEA1CKA470	47μF, 16V	1
C171	ECQG1H222KZ	0.0022μF	1
C172, 173	ECCR1H221J	220pF	2
C174	ECCR1H470J	47pF	1
C175	ECEA1HKN010	1μF, 50V	1
C176	ECQG1H222KZ	0.0022μF	1
C177	ECCR1H221J	220pF	1
C178	ECKR1E473ZV	0.047μF	1
C179	ECCR1H681J	680pF	1
C180, 181	ECEA1HKN010	1μF, 50V	2
C182, 183	ECEA1HKA010	1μF, 50V	2
C184	ECCR1H151J	150pF	1
C185~187	ECKR1E473ZV	0.047μF	3
C189~209	ECKR1E473ZV	0.047μF	21
C211~215	ECKR1E473ZV	0.047μF	5
C218, 219	ECKR1E473ZV	0.047μF	2
C220	ECCR1H101J	100pF	1
C221	ECQV1H104JZ	0.1μF	1
C222	ECQV1H473JZ	0.047μF	1
C223	ECQM1H103KV	0.01μF	1
C224	ECRR1H104ZF	0.1μF	1
C225	ECCR1H101J	100pF	1
C226	ECCR1H470J	47pF	1
C227	ECQG1H152KZ	0.0015μF	1
C228	ECCR1H151J	150pF	1
C229	ECQV1H473JZ	0.047μF	1
C230	ECQG1H152KZ	0.0015μF	1
C231	ECCR1H151J	150pF	1
C232	ECQV1H473JZ	0.047μF	1
C233	ECQG1H152KZ	0.0015μF	1
C234	ECCR1H151J	150pF	1
C235	ECQV1H473JZ	0.047μF	1
C236	ECQG1H152KZ	0.0015μF	1
C237	ECCR1H151J	150pF	1
C238	ECQV1H473JZ	0.047μF	1
C239	ECQG1H152KZ	0.0015μF	1
C240	ECCR1H151J	150pF	1
C241	ECQV1H473JZ	0.047μF	1
C242	ECQG1H152KZ	0.0015μF	1
C243	ECCR1H151J	150pF	1
C244	ECQV1H473JZ	0.047μF	1
C245	ECQG1H152KZ	0.0015μF	1
C246	ECCR1H151J	150pF	1
C247	ECQV1H473JZ	0.047μF	1
C248	ECCR1H221J	220pF	1
C249	ECQV1H473JZ	0.047μF	1
C250	ECQV1H334JZ	0.33μF	1
C251	ECEA1HKN010	1μF, 50V	1
C301	ECEA1HKA2R2	2.2μF, 50V	1

DRV DIGITAL REVERB CIRCUIT

Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS	
IC1	MN1280R	Reset IC	1
IC2	SVIGHM65256	256K bit Partial S RAM	1
IC3	SVIGMB622416	Gate Array	1
IC4	MN8305S	A-D/D-A Converter	1
IC5	SVIG87064073	Digital Signal Processer	1
IC6	SVIGM5278L05	+5V Voltage Regulator	1
IC7	SVIGM5220L	Operational Amplifier	1
IC8~10	SVIGM5218L	Operational Amplifier	3

Ref. No.	Part No.	Description	Per/Set
IC11	SVIGLM1894N	Dynamic Noise Reduction	1
IC12	MN74HC02S	Quad 2-input NOR Gates	1
TRANSISTORS			
Q1, 2	2SJ105GR	FET	2
DIODES			
D1~5	MA165TA5		5
OSCILLATOR			
X1	SVQGA20MX040	20MHz, Ceramic Oscillator	1
SEMI-FIXED RESISTOR			
VR1	EVND4AA00B24	20KΩ B, DRV Bias	1
RESISTORS			
R1	ERDS2TJ333	33KΩ	1
R2	ERDS2TJ682	6.8KΩ	1
R3, 4	ERDS2TJ473	47KΩ	2
R5	ERDS2TJ393	39KΩ	1
R6, 7	ERDS2TJ103	10KΩ	2
R8	ERDS2TJ473	47KΩ	1
R9	ERDS2TJ152	1.5KΩ	1
R10	ERDS2TJ563	56KΩ	1
R11	ERDS2TJ183	18KΩ	1
R12, 13	ERDS2TJ823	82KΩ	2
R14	ERDS2TJ153	15KΩ	1
R15	ERDS2TJ103	10KΩ	1
R16	ERDS2TJ472	4.7KΩ	1
R17	ERDS2TJ153	15KΩ	1
R18	ERDS2TJ103	10KΩ	1
R19	ERDS2TJ472	4.7KΩ	1
R20	ERDS2TJ682	6.8KΩ	1
R21~23	ERDS2TJ473	47KΩ	3
R24	ERDS2TJ682	6.8KΩ	1
R25~27	ERDS2TJ473	47KΩ	3
R36, 37	ERDS2TJ331	330Ω	2
R38	ERDS2TJ102	1KΩ	1
R39	ERDS2TJ221	220Ω	1
R40, 41	ERDS2TJ473	47KΩ	2
R44, 45	ERDS2TJ472	4.7KΩ	2
R46, 47	ERDS2TJ221	220Ω	2
R50~52 ⚠	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	3
R53, 54 ⚠	ERD2FCG100	10Ω, 1/4W, Fuse Type	2
R55	ERDS2TJ105	1MΩ	1
R58, 59	ERDS2TJ101	100Ω	2
R62~66	ERDS2TJ152	1.5KΩ	5
R68~70	ERDS2TJ472	4.7KΩ	3
R71	ERDS2TJ225	2.2MΩ	1
R72	ERDS2TJ332	3.3KΩ	1
R73, 74	ERDS2TJ225	2.2MΩ	2
CAPACITORS			
C1	ECQB1H153JZ	0.015µF	1
C2	ECQG1H682KZ	0.0068µF	1
C3, 4	ECCR1H471J	470pF	2
C5	ECCR1H101J	100pF	1
C6	ECEA1HKA010	1µF, 50V	1
C8	ECEA1HKA010	1µF, 50V	1
C9	ECQG1H152KZ	0.0015µF	1
C10	ECCR1H151J	150pF	1
C11	ECEA1HKA010	1µF, 50V	1
C12	ECQG1H332KZ	0.0033µF	1
C13	ECQG1H472KZ	0.0047µF	1
C14, 15	ECCR1H471J	470pF	2
C16	ECCR1H101J	100pF	1
C17	ECEA1HKA010	1µF, 50V	1
C18	ECQG1H332KZ	0.0033µF	1
C19	ECQG1H472KZ	0.0047µF	1
C20, 21	ECCR1H471J	470pF	2
C22	ECCR1H101J	100pF	1
C31, 32	ECEA1HKA010	1µF, 50V	2
C33	ECEA1HKAR22	0.22µF, 50V	1
C34	ECQB1H103JZ	0.01µF	1
C35	ECEA1HKAR22	0.22µF, 50V	1
C36	ECQB1H103JZ	0.01µF	1
C37	ECQV1H473JZ	0.047µF	1
C38	ECQV1H104JZ	0.1µF	1
C39	ECQB1H103JZ	0.01µF	1
C40	ECQG1H332KZ	0.0033µF	1
C41	ECEA1CKA470	47µF, 16V	1
C42	ECEA1CKA100	10µF, 16V	1
C43	ECEA1CKA470	47µF, 16V	1
C50~52	ECEA0JKA101	100µF, 6.3V	3
C53, 54	ECEA0JKS331	330µF, 6.3V	2
C55, 56	ECEA1CKA101	100µF, 16V	2
C57	ECCR1H101J	100pF	1
C58, 59	ECCR1H100J	10pF	2
C60	ECKR1E473ZV	0.047µF	1
C62, 63	ECKR1E473ZV	0.047µF	2
C66	ECCR1H470J	47pF	1
C67	ECRR1H104ZF	0.1µF	1
C68	ECEA1HKN010	1µF, 50V	1
C69	ECEA1HKA010	1µF, 50V	1
C70	ECRR1H104ZF	0.1µF	1

PKB PEDAL KEYBOARD CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN1280R	Reset IC	1
○ IC2	D78C11AWF03	Microcomputer	1
OSCILLATOR			
X1	SVQGA15MX001	15MHz, Ceramic Oscillator	1
COMPONENT COMBINATIONS			
Z1~3	EXBPI8332JM	3.3KΩ×8	3
SWITCHES			
○ S1~14	QSPG1001AA	Rubber Switch (5pcs. on one)	3
RESISTORS			
R1	ERDS2TJ102	1KΩ	1
R10	ERDS2TJ103	10KΩ	1
R11, 12	ERDS2TJ472	4.7KΩ	2
R13, 14 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	2
R15, 16	ERDS2TJ103	10KΩ	2
R17	ERDS2TJ101	100Ω	1
R18	ERDS2TJ472	4.7KΩ	1
R19~21	ERDS2TJ103	10KΩ	3
R22 ⚠	ERD2FCG101	100Ω, 1/4W, Fuse Type	1

	Ref. No.	Part No.	Description	Per/Set
	R23	ERDS2TJ184	180KΩ	1
		CAPACITORS		
	C1	ECQV1H104JZ	0.1μF	1
	C2, 3	ECCR1H220J	22pF	2
	C4	ECEA0JKA101	100μF, 6.3V	1
	C5	ECQV1H104JZ	0.1μF	1
	C6	ECEA1CKA470	47μF, 16V	1

EXP EXPRESSION CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		CDS		
	CS1	SVEG5	Light Sensitive Device	1

ACP AC POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		LINE FILTER		
	L1 ⚠	SLTGLF4	Line Filter	1
		SWITCH		
	S1 EK XR ⚠ XL XS XD X	ESE37209	Voltage Selector, [EK], [XR], [XL], [XS], [XD], [X] only	1
		FUSES		
	F1 M XM ⚠ MC	XBA1C50NU100	5A, 125V, [M], [XM], [MC] only	1
	F1 N ⚠	XBA1C31NS5	3.15A, 125V, [N] only	1
	F1 } EK XR ⚠ XL XS	XBA2C25TB0	T2.5A, 250V } [EK], [XR], [XL], [XS], [XD], [X] only	1
	F2 } XD X ⚠	XBA2C12TB0	T1.25A, 250V	1
	F2 ⚠	XBA2C12TB0	T1.25A, 250V, Other areas	1
		CAPACITORS		
	C1 ⚠	ECKCVA1472MF	4700pF, Line-Capacitor	1
	C2 ⚠	ECQU2A104MN	0.1μF, 250V, Across-the Line Capacitor	1

PSS SUB POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUIT		
	IC1	SVIGM5F7812	Voltage Regulator	1
		TRANSISTORS		
	Q1, 2	2SD1266		2
S	Q3, 5	2SC2320LFG	2SC1310FG (SUB. Part)	2
	Q4, 7	2SJ105GR	FET	2
S	Q6, 8	2SA1015-GR	2SA933STRS (SUB. Part)	2

	Ref. No.	Part No.	Description	Per/Set
	Q9	2SB941		1
		DIODES		
	D1, 2 ⚠	SVDGGP20GL	Rectifier	2
	D5, 6, 9, 10 ⚠	SVDGERA1502Y	Rectifier	4
	D7, 8	MA4200	Zener, 20V	2
	D11	MA165TA5		1
		RELAY		
○	RL1	QSYGR3211737	Relay	1
		FUSES		
	F1, 2 M ⚠ XM MC	XBA1C31NU100	3.15A, 125V, [M], [XM], [MC] only	2
		RESISTORS		
	R1, 2 ⚠	ERX2ANJP1R0S	1Ω, 2W, Flame-Proof	2
	R3	ERDS2TJ471	470Ω	1
	R4	ERDS2TJ822	8.2KΩ	1
	R5	ERDS2TJ223	22KΩ	1
	R6	ERDS2TJ103	10KΩ	1
	R7	ERDS2TJ471	470Ω	1
	R8 ⚠	ERX1ANJP1R0S	1Ω, 1W, Flame-Proof	1
	R9	ERDS2TJ223	22KΩ	1
		CAPACITORS		
	C1	ECEA1VU332	3300μF, 35V	1
	C2	ECEA1VU222	2200μF, 35V	1
	C3~6	ECEA1HKA010	1μF, 50V	4
	C7	ECEA1EU101	100μF, 25V	1
	C8	ECEA1HKA010	1μF, 50V	1

PSM MAIN POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUITS		
	IC1	SVIGM5291P	Switching Regulator	1
	IC2	SVIGM5F7815	Voltage Regulator	1
	IC3	SVIGM5F7915	Voltage Regulator	1
		TRANSISTORS		
	Q1	2SB953AQP		1
S	Q2	2SA1015-GR	2SA933STRS (SUB. Part)	1
S	Q3	2SC2320LFG	2SC1310FG (SUB. Part)	1
		DIODES		
	D1, 4	MA165TA5		2
	D2	SVDGERC9102		1
	D3	MA2062LF	Zener, 6.2V	1
		COIL		
	L1	SLCG3A121T	Coil	1
		RESISTORS		
	R1 ⚠	ERX1ANJPR22S	0.22Ω, 1W, Flame-Proof	1
	R2	ERDS2TJ471	470Ω	1
	R3	ERDS2TJ152	1.5KΩ	1

Ref. No.	Part No.	Description	Per/Set
R4	ERDS2TJ103	10KΩ	1
R5	ER0S2CKF1001	1KΩ, ±1%	1
R6	ER0S2CKF3571	3.57KΩ, ±1%	1
R7 ⚠	ERG1ANJP221S	220Ω, 1W, Flame-Proof	1
R8, 9	ERDS2TJ101	100Ω	2
R10	ERDS2TJ223	22KΩ	1
R11	ERDS2TJ473	47KΩ	1
R12	ERDS2TJ103	10KΩ	1
R14	ERDS2TJ103	10KΩ	1
R15	ERDS2TJ223	22KΩ	1
R16	ERDS2TJ103	10KΩ	1
R17	ERDS2TJ102	1KΩ	1
CAPACITORS			
C1	ECEA1EU471	470μF, 25V	1
C2	ECCR1H471J	470pF	1
C3	ECEA1HKA2R2	2.2μF, 50V	1
C4, 5	ECEA0JU222	2200μF, 6.3V	2
C6	ECKR1E473ZV	0.047μF	1
C7~10	ECEA1EKA470	47μF, 25V	4
C11	ECEA1CKA100	10μF, 16V	1

PA POWER AMPLIFIER CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGS4221M2M	Power Amplifier	1
DIODES			
D1, 2, 4, 5, ⚠ 8, 9, 11, 12	SVDGS3V20-15	Rectifier	8
RESISTORS			
R1	ERDS2TJ273	27KΩ	1
R2	ERDS2TJ153	15KΩ	1
R3	ERDS2TJ222	2.2KΩ	1
R4	ERDS2TJ393	39KΩ	1
R5	ERDS2TJ472	4.7KΩ	1
R6, 7	ERDS2TJ222	2.2KΩ	2
R8	ERDS2TJ224	220KΩ	1
R9	ERDS2TJ103	10KΩ	1
R11	ERDS2TJ681	680Ω	1
R12, 13	ERDS2TJ102	1KΩ	2
R14 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
R15 ⚠	ERD2FCG101	100Ω, 1/4W, Fuse Type	1
R16 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
R17, 18	ERDS2TJ222	2.2KΩ	2
R19	ERDS2TJ472	4.7KΩ	1
R20	ERDS2TJ393	39KΩ	1
R21	ERDS2TJ222	2.2KΩ	1
R23	ERDS2TJ153	15KΩ	1
R24	ERDS2TJ273	27KΩ	1
R40 ⚠	ERD2FCG101	100Ω, 1/4W, Fuse Type	1
R41 ⚠	ERD50FJ4R7	4.7Ω, 1/2W, Flame-Proof	1
CAPACITORS			
C1	ECEA1HKN010	1μF, 50V	1
C2	ECCR1H221J	220pF	1
C3	ECEA1EKA100	10μF, 25V	1
C4	ECEA1HU470	47μF, 50V	1

Ref. No.	Part No.	Description	Per/Set
C5	ECEA1HKA4R7	4.7μF, 50V	1
C6	ECQV1H104JZ	0.1μF	1
C7	ECEA1HU470	47μF, 50V	1
C9	ECEA1HU470	47μF, 50V	1
C10	ECEA1EKA100	10μF, 25V	1
C11	ECCR1H221J	220pF	1
C12	ECEA1HKN010	1μF, 50V	1
C13	ECES1HU472H	4700μF, 50V	1
C14, 15	ECEA50Y3R3	3.3μF, 50V	2
C22	ECEA1HU470	47μF, 50V	1
C23	ECQV1H104JZ	0.1μF	1
C29	ECES1HU472H	4700μF, 50V	1
C30 ⚠	ECQE2A104MW	0.1μF, 250V	1
○ C31, 32	ECEA50Y8R2	8.2μF, 50V	2

JACK JACK CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUIT			
IC1	SVIGM5218L	Operational Amplifier	1
JACKS			
JK1, 2	SJJG470A	Line Out (R, L)	1
JK3	SJJG210A	Microphone	1
JK4	SJJG100A	Headphones	1
VARIABLE RESISTOR			
VR1	EWHD5A576A54	50KΩ A, Mic Volume	1
RESISTORS			
R1, 2 ⚠	ERD2FCG100	10Ω, 1/4W, Fuse Type	2
R3	ERDS2TJ222	2.2KΩ	1
R4	ERDS2TJ472	4.7KΩ	1
R5	ERDS2TJ102	1KΩ	1
R6	ERDS2TJ222	2.2KΩ	1
R7	ERDS2TJ102	1KΩ	1
R8	ERDS2TJ472	4.7KΩ	1
R9	ERDS2TJ224	220KΩ	1
R10	ERDS2TJ103	10KΩ	1
R11	ERDS2TJ224	220KΩ	1
R12	ERDS2TJ103	10KΩ	1
R13	ERDS2TJ154	150KΩ	1
R14	ERDS2TJ102	1KΩ	1
R15, 16 ⚠	ERG1ANJP680S	68Ω, 1W, Flame-Proof	2
R18, 19	ERDS2TJ332	3.3KΩ	2
CAPACITORS			
C1, 2	ECEA1EKA470	47μF, 25V	2
C3, 8	ECEA1HKN010	1μF, 50V	2
C4, 5	ECCR1H101J	100pF	2
C6, 7	ECKR1E473ZV	0.047μF	2

MVOL MAIN VOLUME CIRCUIT

Ref. No.	Part No.	Description	Per/Set
VARIABLE RESISTOR			
VR1	EVD06510B24G	20KΩ B, Main Volume	1

Ref. No.	Part No.	Description	Per/Set
CAPACITOR			
C1	ECKR1E473ZV	0.047μF	1

CPL UPPER CONTROL PANEL LEFT CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM603A121	Gate Array	1
IC2~4	SVIGM74LS07	Hex Buffers (O.C.)	3
TRANSISTORS			
Q1~4	2SA830SB		4
DIODES			
D1~16, 19~64	MA165TA5		61
D66~78, 80, 83~91, 93, 103, 104, 119~123	LN282R	LED (Red)	31
D79, 92, 94~102, 106~118	LN382G	LED (Green)	24
COMPONENT COMBINATION			
Z1	EXBPI8103JM	10KΩ×8	1
SWITCHES			
S2~16, 19~64	SSHG1045A	Push Switch	60
RESISTORS			
R10~13	ERDS2TJ103	10KΩ	4
R14	ERDS2TJ184	180KΩ	1
R15	ERDS2TJ221	220Ω	1
R16	ERDS2TJ103	10KΩ	1
R17~21	ERDS2TJ152	1.5KΩ	5
R22~38	ERDS2TJ470	47Ω	17
CAPACITORS			
C2	ECRR1H104ZF	0.1μF	1
C3	ECEA0JKA101	100μF, 6.3V	1
C4	ECCR1H101J	100pF	1
C5	ECEA1HKA010	1μF, 50V	1
C6~8	ECRR1H104ZF	0.1μF	3
C9	ECCR1H331J	330pF	1

ESW ENCODER SWITCH

Ref. No.	Part No.	Description	Per/Set
SWITCH			
S1	SSRG110A	Encoder Switch	1

CPSL LOWER CONTROL PANEL LEFT CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM603A121	Gate Array	1
IC2~4	SVIGM74LS07	Hex Buffers (O.C.)	3
TRANSISTORS			
Q1~5	2SA830SB		5
DIODES			
D1~76, 79~82, 151	MA165TA5		60
D83~90, 114~145	SEL2210SM	LED (Red)	40
D99~102, 104, 105	LN282R	LED (Red)	5
D103, 147, 149, 150	LN382G	LED (Green)	4
COMPONENT COMBINATION			
Z1	EXBPI8103JM	10KΩ×8	1
SWITCHES			
S2~76, 79~82, 151	SSHG1045A	Push Switch	59
RESISTORS			
R10~13	ERDS2TJ103	10KΩ	4
R14	ERDS2TJ184	180KΩ	1
R15	ERDS2TJ221	220Ω	1
R16	ERDS2TJ103	10KΩ	1
R17~21	ERDS2TJ152	1.5KΩ	5
R22, 23, 26~29, 32~40	ERDS2TJ470	47Ω	15
CAPACITORS			
C3	ECEA0JKA101	100μF, 6.3V	1
C4	ECCR1H101J	100pF	1
C5	ECEA1HKA010	1μF, 50V	1
C6~8	ECRR1H104ZF	0.1μF	3
C9	ECCR1H331J	330pF	1

CPC UPPER CONTROL PANEL CENTER CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM603A121	Gate Array	1
IC2	SVIGM74LS07	Hex Buffers (O.C.)	1
TRANSISTORS			
Q1~6	2SA830SB		6
Q7	2SC2320LFG	2SC1310FG (SUB. Part)	1
DIODES			
D1~62, 87	MA165TA5		57
D63~73, 76~79, 85, 86	LN282R	LED (Red)	16

Ref. No.	Part No.	Description	Per/Set
D74, 80~84	LN382G	LED (Green)	6
COMPONENT COMBINATION			
Z1	EXBPI8103JM	10KΩ×8	1
SWITCHES			
S2~62	SSHG1045A	Push Switch	59
VARIABLE RESISTOR			
○ VR1	QRVG20N01B14	10KΩ B, LCD Contrast	1
RESISTORS			
R10~13	ERDS2TJ103	10KΩ	4
R14	ERDS2TJ184	180KΩ	1
R15	ERDS2TJ221	220Ω	1
R16	ERDS2TJ103	10KΩ	1
R17~21	ERDS2TJ152	1.5KΩ	5
R26~29	ERDS2TJ470	47Ω	4
R32~35	ERDS2TJ470	47Ω	4
R37	ERDS2TJ225	2.2MΩ	1
R38	ERDS2TJ222	2.2KΩ	1
R42	ERDS2TJ105	1MΩ	1
R43	ERDS2TJ474	470KΩ	1
R44	ERDS2TJ155	1.5MΩ	1
CAPACITORS			
C2	ECRR1H104ZF	0.1μF	1
C3	ECEA0JKA101	100μF, 6.3V	1
C4	ECCR1H101J	100pF	1
C5	ECEA1HKA010	1μF, 50V	1
C6	ECRR1H104ZF	0.1μF	1
C7	ECEA1HKA2R2	2.2μF,50V	1

CPR UPPER CONTROL PANEL RIGHT CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM603A121	Gate Array	1
IC2~5	SVIGM74LS07	Hex Buffers (O.C.)	4
TRANSISTORS			
Q1~4	2SA830SB		4
DIODES			
D1~81	MA165TA5		56
D86~107, 141~162	SEL2210SM	LED (Red)	36
D109~126, 136	LN282R	LED (Red)	15
D128~131	LN382G	LED (Green)	4
SWITCHES			
S3~83	SSHG1045A	Push Switch	55

Ref. No.	Part No.	Description	Per/Set
RESISTORS			
R2~13	ERDS2TJ103	10KΩ	12
R14	ERDS2TJ184	180KΩ	1
R15	ERDS2TJ221	220Ω	1
R16	ERDS2TJ103	10KΩ	1
R17~21	ERDS2TJ152	1.5KΩ	5
R22~33, 36~43	ERDS2TJ470	47Ω	20
CAPACITORS			
C2	ECRR1H104ZF	0.1μF	1
C3	ECEA0JKA101	100μF, 6.3V	1
C4	ECCR1H101J	100pF	1
C5	ECEA1HKA010	1μF, 50V	1
C6~8	ECRR1H104ZF	0.1μF	3
C9	ECCR1H681J	680pF	1

■ WIRING PARTS

Ref. No.	Part No.	Description	Per/Set
○ W2, 8, 25	QEXG14003SSA	Connector with Wire	3
○ W3	QEXG04012SSA	Connector with Wire	1
○ W4	QEXG16003SSA	Connector with Wire	1
○ W6	QEXG14002SSA	Connector with Wire	1
W7	SWKG168SSA	Connector with Wire	1
○ W9	QEXG11001STA	Connector with Wire	1
○ W10	QEXG04003STA	Connector with Wire	1
○ W11	QEXG12002SSA	Connector with Wire	1
○ W12	QEXG03001STA	Connector with Wire	1
○ W13	QEXG09001ZA	Connector with Wire	1
○ W14	QEXG14001SSA	Connector with Wire	1
○ W15	QEXG04006LTA	Connector with Wire	1
○ W16	QEXG04007ZB	Connector with Wire	1
W17	SWKG08115SSA	Connector with Wire	1
○ W19	QEXG13001SSA	Connector with Wire	1
○ W20	QEXG16001STA	Connector with Wire	1
W23	SWKG08132SSA	Connector with Wire	1
W24	SWKG06117SSA	Connector with Wire	1
○ W26	QEXG13004ZA	Connector with Wire	1
W29	SWKG0712SSA	Connector with Wire	1
○ W30	QEXG13002SSA	Connector with Wire	1
○ W31	QEXG04010LSA	Connector with Wire	1
○ W32	QEXG12001SSA	Connector with Wire	1
○ W33	QEXG13003ZA	Connector with Wire	1
○ W34	QEXG03007ZA	Connector with Wire	1
○ W35	QEXG05005ZA	Connector with Wire	1
○ W36	QEXG10003ZA	Connector with Wire	1
○ W37	QEXG04005LSA	Connector with Wire	1
○ W38	QEXG03006SSA	Connector with Wire	1
○ W39	QEXG04013ZA	Connector with Wire	1
○ W40	QEXG05006SSA	Connector with Wire	1
○ W41	QEXG04019LTA	Connector with Wire	1
○ W42	QEXG04014SSA	Connector with Wire	1
W43	QEXG06001SSA	Connector with Wire	1

REPLACEMENT PARTS LIST......Cabinet and Chassis Parts

Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.
4. There are two identical models are available as SX-GN3 and SX-GN3K and all specifications are the same in both models except cabinet parts and panel parts. Identify an unit with model number which available on the name plate on the rear board and order correct parts.

SX-GN3K CABINET & CHASSIS PARTS

Ref. No.		Part No.	Description	Per/Set
	POWER SWITCH			
○	S1 ⚠	QSPG1003AA	Power Switch	1
	SPEAKERS			
	SP1, 2	EAS20PL255C	20cm, 8Ω	2
	SP3, 4	EAS65PH31A	6.5cm, 8Ω	2
	SP5, 6	EAS15S06A	6×13cm, 16Ω	2
	TRANSFORMERS			
○	T1 N ⚠	QTPG1P001A	Power Transformer, [N] only	1
○	T1 ⚠	QTPG1P002A	Power Transformer, Others	1
○	T2 ⚠	QTPG1J001A	Power Transformer	1
	POWER CORD, PLUGS			
	PC1 N ⚠	SJAG11	AC Power Cord, [N] only	1
	PC1 XL XR ⚠	SJAG23	AC Power Cord, [XL], [XR] only	1
	PC1 EK XS XD ⚠	SJAG25	AC Power Cord, [EK], [XS], [XD] only	1
	PC1 ⚠	SJAG24	AC Power Cord, Others	1
	PC2 X ⚠	SJP5213-1	Attachment Plug, [X] only	1
	PC3 XD ⚠	SJPG1350A	Power Plug, [XD] only	1
	POWER INDICATOR			
	D1	LN29RP	LED, Power Indicator	1
	CABINET AND OTHERS			
○	1	QGAG2002AA	Clear Panel, Music Rack	1
○	4	QKQGA001DA	Top Cover Ass'y	1
○	4-1	QGKG0005BA	Ornament (Left)	1
○	4-2	QGKG0006BA	Ornament (Right)	1
○	4-3	QGKG0001BA	Ornament (Front)	1
	4-4	SGBG150A	Technics Badge	1
○	5	QKQGF001AA	Sliding Cover Ass'y	1
○	5-1	QGKG0010AA	Ornament	1
	5-2	SBEG30A	Lock	1
	5-3	SBEG40C	Staple	1
	5-4	SBHG6007-1	Hinge	3
	5-5	SHRG9930A	Catch, Guide Rail	10
○	5-6	QMFG1001AA	Felt	2
	5-7	SHSG119	Felt	6
	6	SBEG60A	Key	1
○	7	QGKG0002AA	Ornament	1
	8	SHSG1830A	Felt	2
○	11	QGPG0001CD	Upper Control Panel	1
○	12	QKWG001AC	Display Cover Panel	1
○	13	QGPG0002CA	Lower Control Panel, Left	1
○	14 N	QGPG0003AA	Lower Control Panel, Right	1
○	14	QGPG0003AD	Lower Control Panel, Right	1
○	15	QMFG4006BB	Felt	4
○	16	QMFG4004BB	Felt	1
	(SX-GN3K)			
○	17	QMFG4005BB	Felt	2
○	18	QMFG4011AA	Felt	1
○	19	SHSG5810A	Felt	1
○	20	QMFG4007BB	Felt	1
○	21	QMFG4001AA	Felt	1
○	22	QMFG4002AA	Felt	1
○	23	SBNG4060B	Knob, Tempo/Program	1
	24	SBNG7031A	Knob, Main Volume	1
	25	SBCG110B	Button, Power Switch	1
	26	SHRG9920A	Spacer	1
○	27	QGKG0007AA	Ornament, Keyboard	1
○	28	QGKG0008BA	Jack Panel	1
	29	SUWG3000A	Bracket	2
	30	SUWG3010A	Bracket	2
	31	SUWG3020A	Bracket	2
	32	SUWG3031A	Bracket	2
○	33	QEXG13004ZA	Cable with Bracket	1
○	34	QEXG13003ZA	Cable with Bracket	1
	34-1	SHRG1160A	Bushing	2
○	35	QKSGE002AA	Front Panel	1
	36	SHSG3050A	Felt	1
	37	SMKG1583A	Jack Panel	1
	38	SBNG4010A	Knob, Mic Volume	1
	39	SHR401-1	Latch	2
	40	SXVG3031B	Knee Lever Ass'y	1
	40-1	SSLG1005A	Leaf Switch	1
	40-2	SSHG1020A	Push Switch	1
	41	SKLA7-2	Foot	1
	42	SHRG2120C	Foot	4
	43	SKEG7640A	Guide Rail	1
	44	SKEG7650A	Guide Rail	1
	45	SKEG7660A	Guide Rail	1
	46	SKEG7670A	Guide Rail	1
	47	SHSG3571A	Felt	2
○	48	QYPG1001AA	Cover	1
○	49	QMAG0008AA	Bracket	1
	50	SHRG1110A	Cord Clamper	1
	51	SHRG1120A	Cord Clamper	1
	52	SXVG5140A	Exprssion Pedal Ass'y	1
	52-1	XAMR55P	Lamp	1
	52-2	RJS205ZA	Lamp Socket	1
	52-3	SHGG908	Lamp Holding Rubber	1
	52-4	SSHG14	Foot Switch	1
○	53	QKQGD001AA	Rear Board (Upper)	1
○	54 EK X XL XR XS XD	QKUG1004BA	Rear Board (Lower), [EK], [X], [XL], [XR], [XS], [XD] only	1
○	54	QKUG1004AA	Rear Board (Lower), Others	1
○	55	QQLG005AA	Label (VOLT ADJ.)	1
	56	SHGG8510A	Spacer	1
	57	SHRG1030A	Cord Band	1
	58	SHRGA9060A	Cord Clamper	2
	59	SUWG219	Binder	7
	60	SHRG9620A	Cord Clamper	1

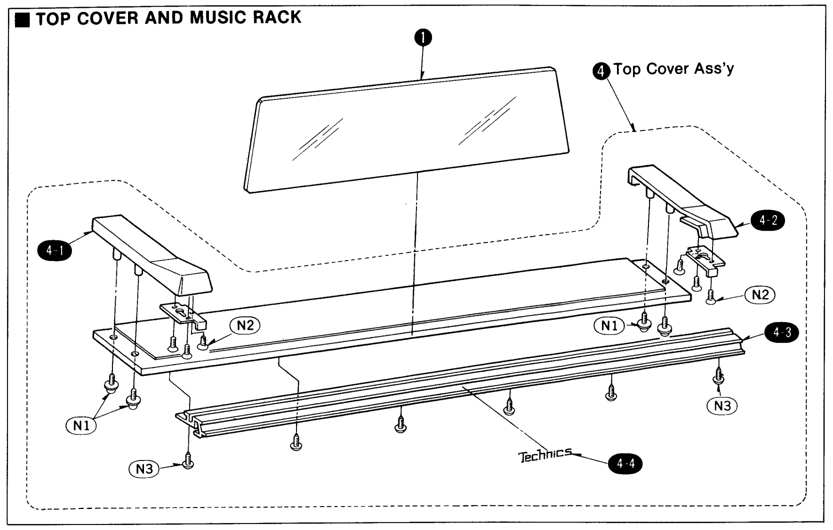
Ref. No.	Part No.	Description	Per/Set
PEDAL KEYBOARD			
○ 61	STBG1164C	Long Key (Gray)	8
62	STBG2052A	Short Key (Black)	5
63 N	STBG2310A	Full-Bass Pedal	1
64 N	SGXG1390A	Ornament	1
○ 66	QMRG2005AA	Insulator	1
67	SHSG1600B	Felt	1
68	SHSG1460A	Felt	14
69	SUSG180A	Spring	14
70	SHGG8130A	Rubber	14
71	SHRG9240A	Spacer	14
MANUAL KEYBOARD			
○ 72	STBGA1160A	White Key (C & F Keys)	8
○ 73	STBGA1170A	White Key (D Key)	4
○ 74	STBGA1180A	White Key (E & B Keys)	8
○ 75	STBGA1190A	White Key (G Key)	4
○ 76	STBGA1200A	White Key (A Key)	4
○ 77	STBGA1210A	White Key (Top Octave C Key)	1
○ 78	STBG2930A	Black Key	20
○ 79	STBG9420A	Key Support	3
○ 80	STBG9440A	Key Support	1
○ 81	QMBG001BA	Spring	49
82	SHGG9050A	Key Guide Rubber	49
○ 83	QMFG1005AA	Felt	1
○ 84	STBG9410A	P.C.B. Holder	3
○ 85	STBG9430A	P.C.B. Holder	1
○ 86	SSPG1A	Actuater	3
○ 87	SSPG2A	Actuater	1
○ 88	QMFG1006AB	Felt	1
○ 89	SHRGA5810A	Membrane Sheet	3
○ 90	SHRGA5820A	Membrane Sheet	1
BENCH			
91	SKZGC560A	Top Cover Ass'y	1
92	SKZGC471B	Leg	4
93	SBEG190A	Spanner	1
SCREW & WASHERS			
N1	SNEG1890A	Screw with Washer	4
N2	XTS4+12A	Screw	26
N3	XTB35+12A	Screw	30
N4	XTWSG2	Screw with Washer	12
N5	SNEG2400A	Screw with Washer	2
N6	XTB4+12A	Screw	24
N7	XTW3+10Q	Screw	63
N8	XNS9	Nut	1
N9	XYN5+C10	Screw with Washer	6
N10	SNEG740A	Screw	2
N11	XTS3+6B	Screw	2
N12	XYN4+F40	Screw with Washer	1
N13	XTT4+16AFZ	Screw	2
N14	XTB4+14A	Screw	2
N15	XTW3+20Q	Screw	4
N16	XTB3+5C	Screw	15
N17	XTW3+8JFZ	Screw	1
N18	XTT4+10AFZ	Screw	3
N19	XTS35+12A	Screw	19
N20	XTS3+12A	Screw	3
N21	XTS3+10AFVC	Screw	6
N22	XTW3+10JFZ	Screw	5
N23	XTT35+10AFVC	Screw	12
N24	XTT4+16AFZ	Screw	6
N25	XTT4+30A	Screw	2
N26	XTB35+12A	Screw	4
N27	SNEG2270A	Screw with Washer	4
N28	SNEG770A	Washer	2
N29	SNE4021-1	Nut	1
N30	XNS12FZ	Nut	2
N31	XTN2+10FFX	Screw	1
N32	XYN3+C12	Screw with Washer	3
N33	XYN3+F16FZ	Screw with Washer	2
N34	XTB3+8BFVC	Screw	2
N35	XTB35+20A	Screw	14
N36	XYN4+F20FZ	Screw with Washer	10
N38	XYN3+F20FZ	Screw with Washer	2
N39	XYN5+C25FZ	Screw with Washer	9
N40	SNEG150B	Washer	9
N41	XTB35+25A	Screw	8
N42	XTB35+8A	Screw	1
N43	XTB3+6B	Screw	11
N44	XTT4+14A	Screw	18
N45	XNG5BS	Nut	14
N46	SNEG360A	Bolt	14
N47	XTV3+10G	Screw	1
N48	SNE499-1	Nut	8
N49	XTN26+6B	Screw	1
N50	XTV3+10C	Screw	1
N51	XYN4+F30	Screw with Washer	4
N52	XTT4+30AFZ	Screw	19
N53	XYN4+F10FZ	Screw with Washer	4
N54	XYN5+F30	Screw with Washer	3
N55	XTB4+8B	Screw	3
N57	XNH10G	Nut	4
N58	XWB10B	Washer	4
N59	XTW3+6J	Screw	12
N60	XTW3+10JFVC	Screw	28
N61	XTB35+14AFZ	Screw	2

SX-GN3K

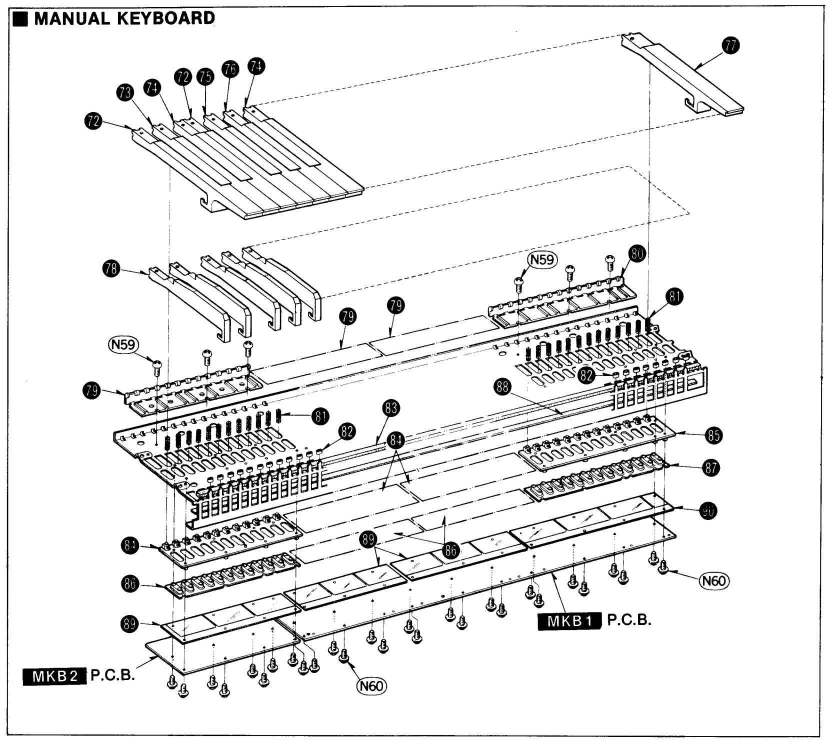
EXPLODED VIEWS OF CABINET

Note: The cabinet assembly parts will not be supplied as repair parts.

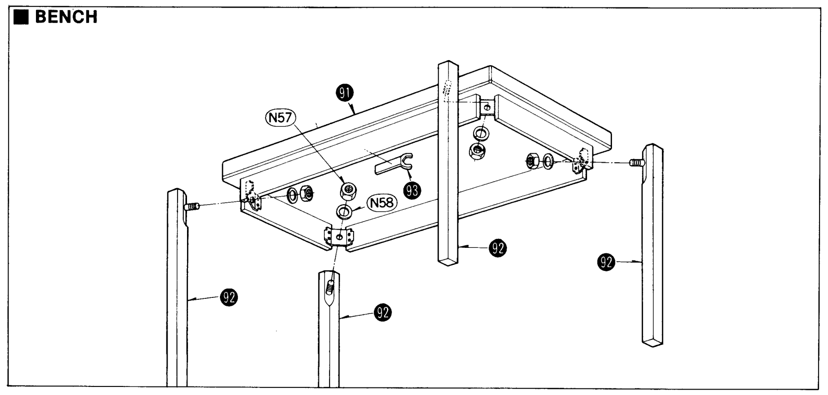
■ TOP COVER AND MUSIC RACK


1
4 Top Cover Ass'y
4-1
4-2
4-3
4-4
Technics
N1
N2
N3

■ MANUAL KEYBOARD


72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
N59
N60
MKB1 P.C.B.
MKB2 P.C.B.

■ BENCH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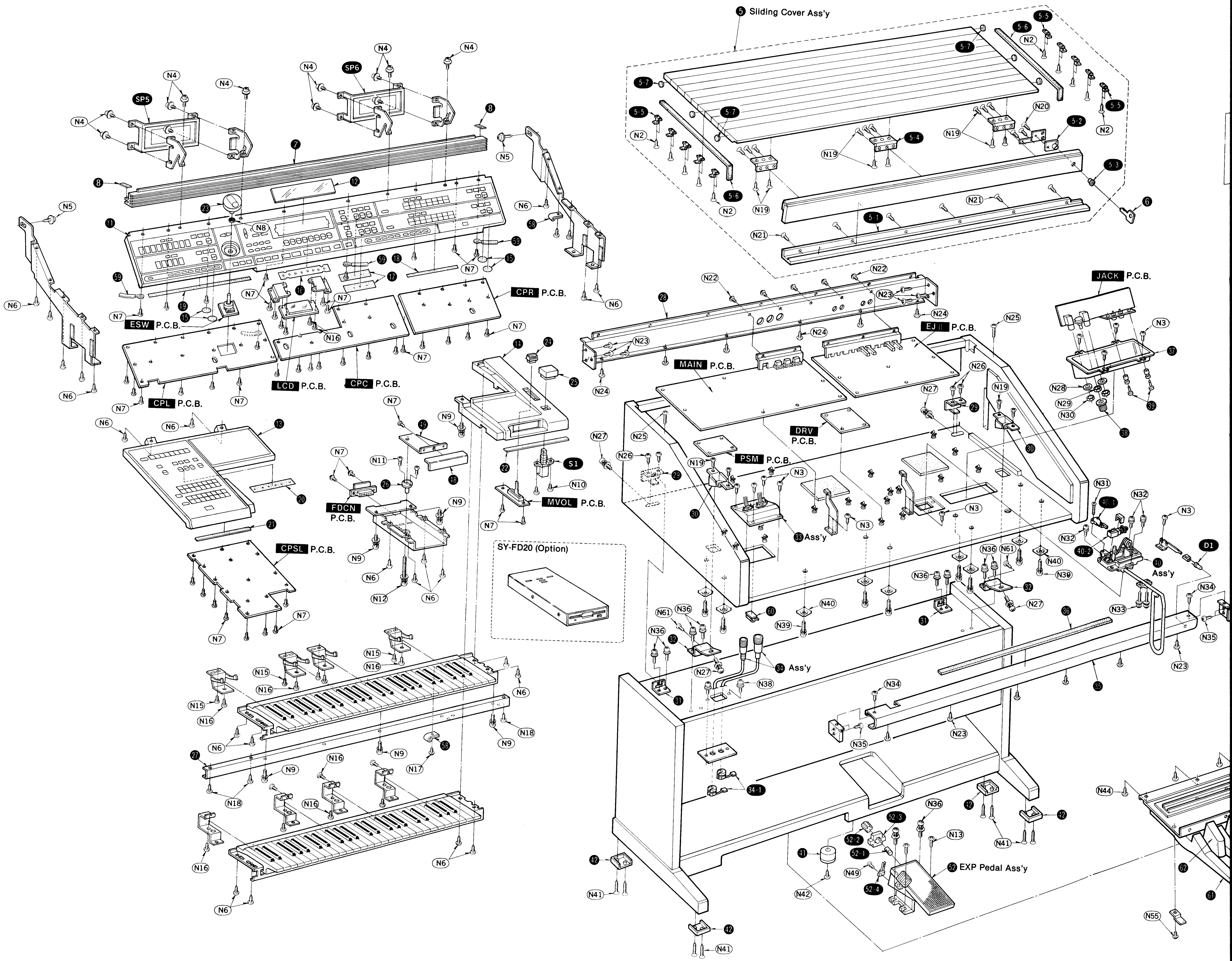
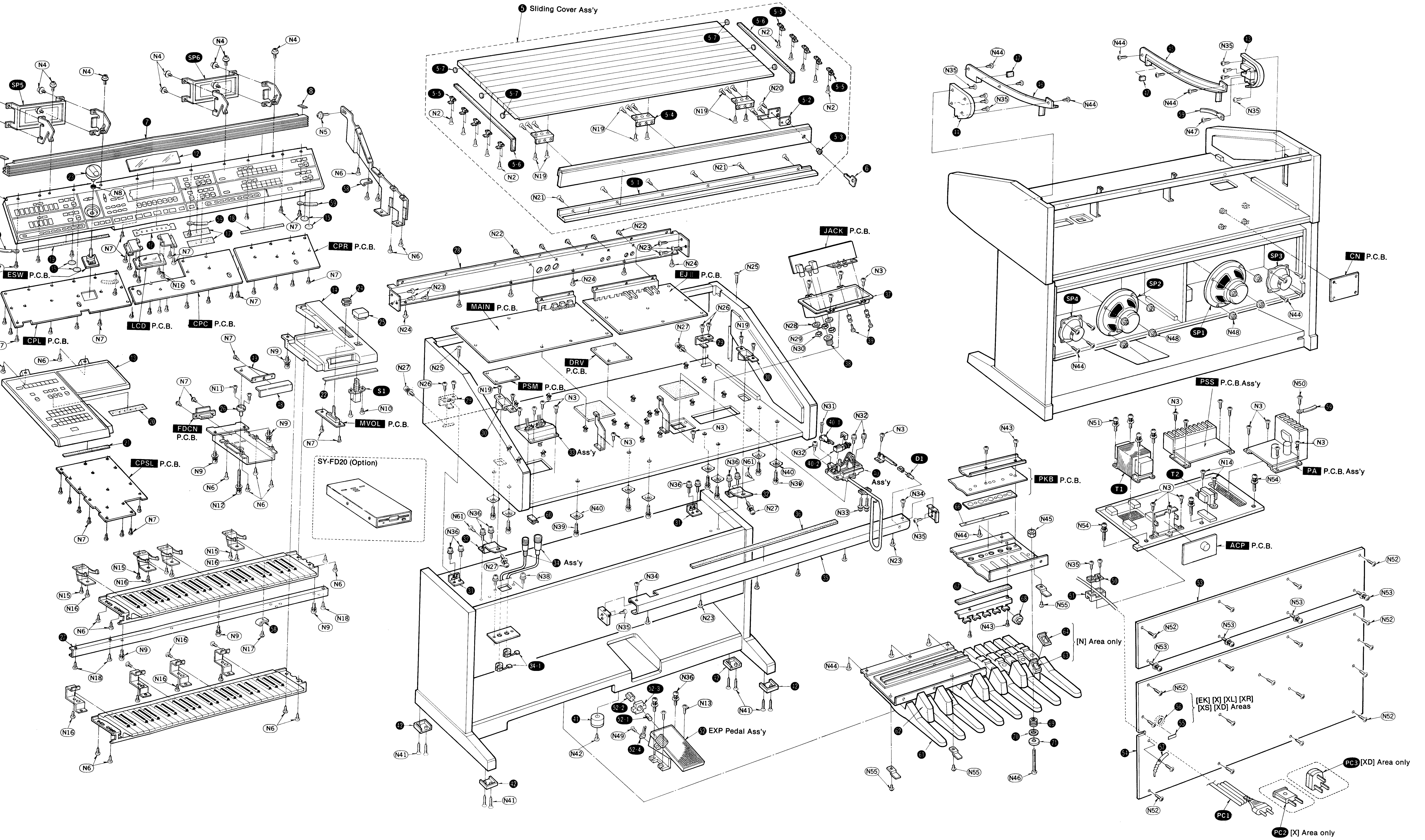
92
93
N57
N58


5 Sliding Cover Ass'y
5-1
5-2
5-3
5-4
5-5
5-6
5-7
6
7
8
11
12
13
SP5
SP6
ESW P.C.B.
LCD P.C.B.
CPC P.C.B.
CPL P.C.B.
CPR P.C.B.
CPSL P.C.B.
FDCN P.C.B.
MVOL P.C.B.
MAIN P.C.B.
DRV P.C.B.
PSM P.C.B.
EJ P.C.B.
JACK P.C.B.
S1
D1
33 Ass'y
34 Ass'y
34-1
40 Ass'y
40-1
40-2
52 EXP Pedal Ass'y
52-1
52-2
52-3
52-4
SY-FD20 (Option)
N2
N3
N4
N5
N6
N7
N8
N9
N10
N11
N12
N13
N15
N16
N17
N18
N19
N20
N21
N22
N23
N24
N25
N26
N27
N28
N29
N30
N31
N32
N33
N34
N35
N36
N38
N39
N40
N41
N42
N44
N49
N55
N61

Note: The cabinet assembly parts will not be supplied as repair parts.

5 6 7 8 9 10 11 12 13 14

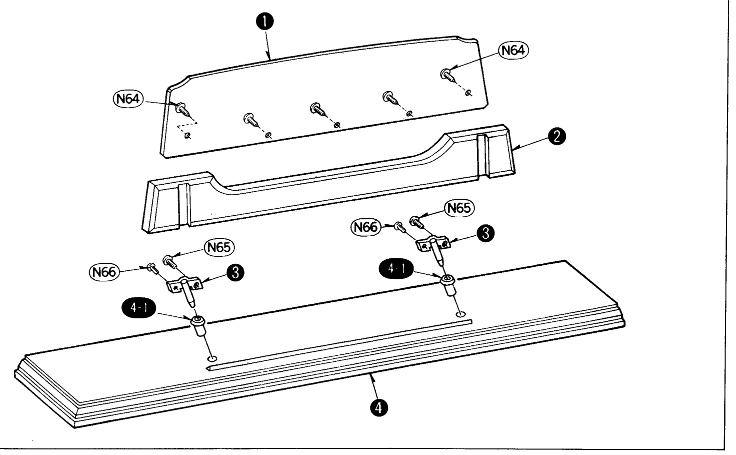

❺ Sliding Cover Ass'y
SP5
SP6
ESW P.C.B.
CPR P.C.B.
LCD P.C.B.
CPC P.C.B.
CPL P.C.B.
FDCN P.C.B.
CPSL P.C.B.
S1
MVOL P.C.B.
SY-FD20 (Option)
MAIN P.C.B.
EJ Ⅲ P.C.B.
JACK P.C.B.
DRV P.C.B.
PSM P.C.B.
Ass'y
Ass'y
Ass'y
D1
CN P.C.B.
SP1
SP2
SP3
SP4
PSS P.C.B.Ass'y
PA P.C.B.Ass'y
PKB P.C.B.
T1
T2
ACP P.C.B.
[N] Area only
EXP Pedal Ass'y
[EK] [X] [XL] [XR] [XS] [XD] Areas
PC1
PC2 [X] Area only
PC3 [XD] Area only

SX-GN3

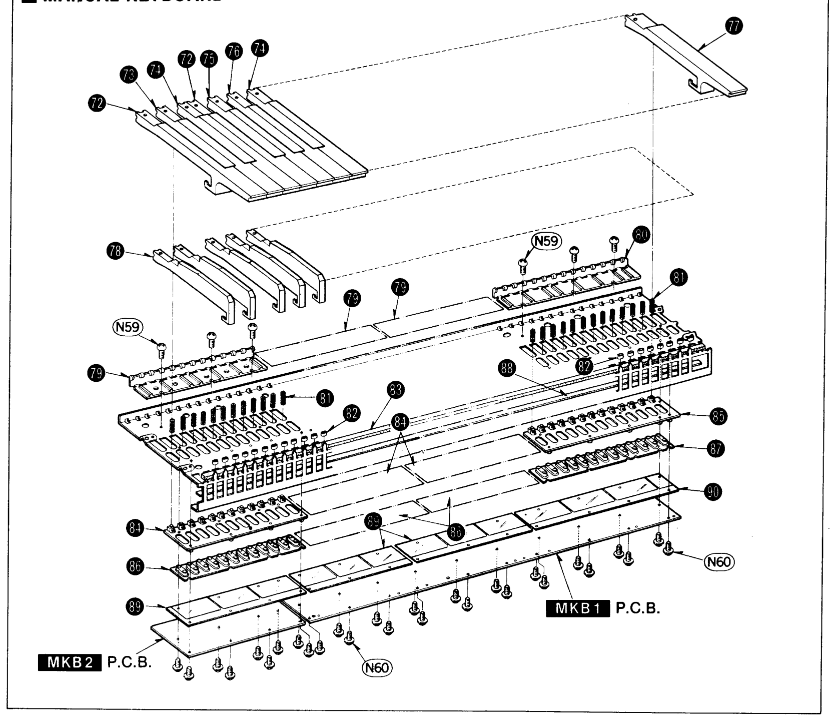
EXPLODED VIEWS OF CABINET

Note: The cabinet assembly parts will not be supplied as repair parts.

■ TOP COVER AND MUSIC RACK


1
N64
N64
2
N66
N65
3
N66
N65
3
4-1
4-1
4

■ MANUAL KEYBOARD


77
73
74
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76
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72
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N59
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81
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N59
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82
84
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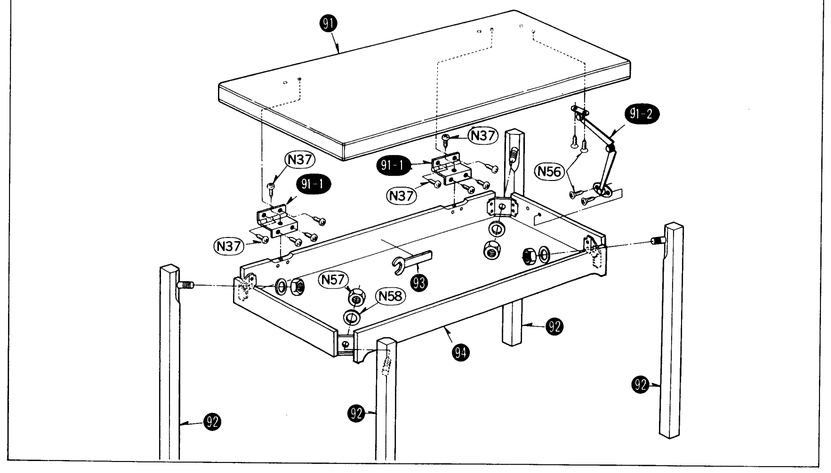
84
86
89
N60
MKB1 P.C.B.
MKB2 P.C.B.
N60

■ BENCH


91
91-2
N37
91-1
N37
N56
91-1
N37
N37
N57
N58
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94
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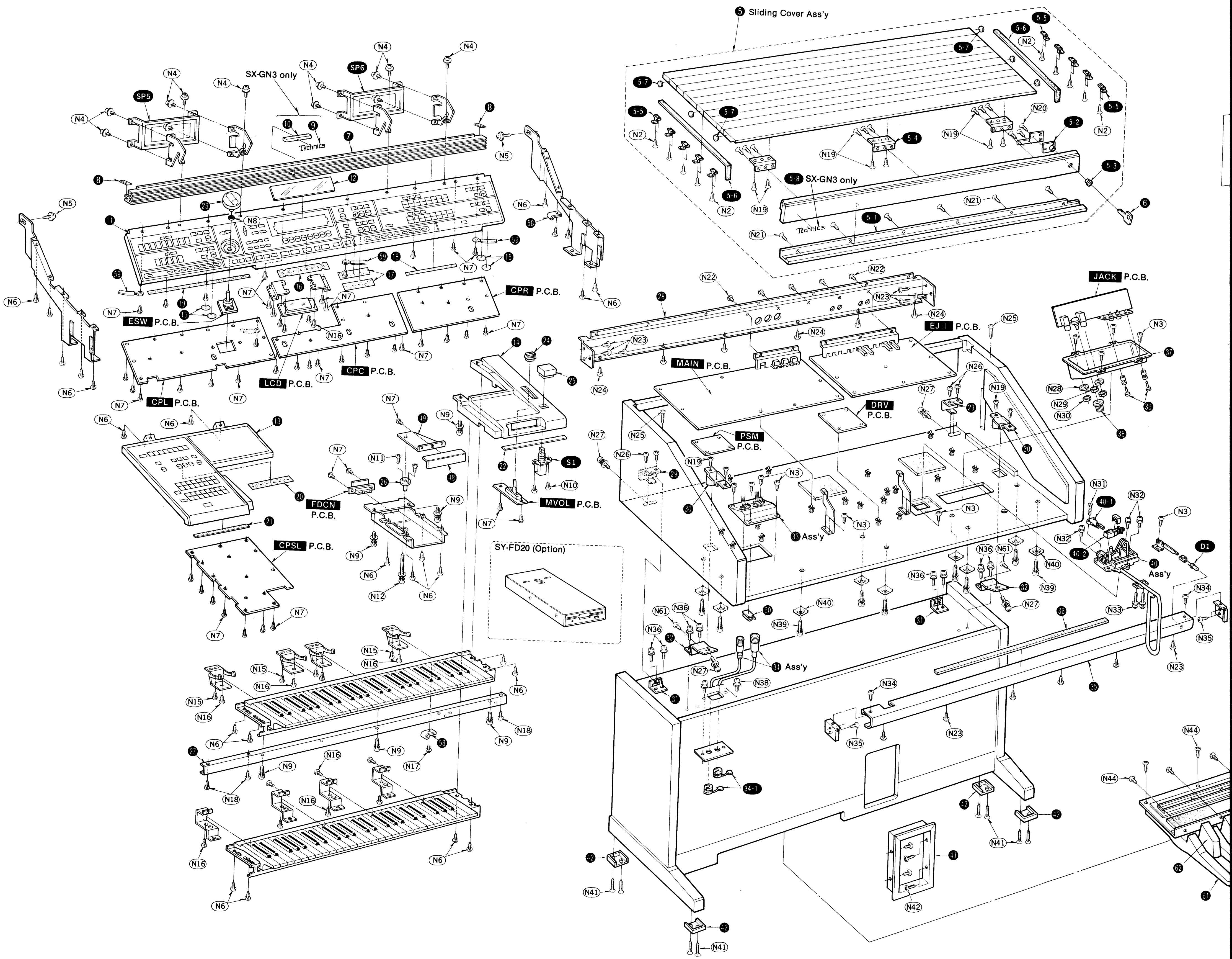
92
92
92


1
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7
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9
10
A
B
C
D
E
F
5 Sliding Cover Ass'y
5-5
5-6
5-7
N2
5-7
5-7
5-5
N2
5-5
5-2
N20
N19
5-4
N19
5-6
N2
N19
5-8 SX-GN3 only
Technics
5-1
N21
N21
5-3
6
N4
N4
N4
N4
N4
SX-GN3 only
SP5
SP6
N66
10
9
Technics
7
8
8
N5
N5
12
23
N8
11
N6
58
59
N7
15
59
18
17
16
N7
N7
N6
N7
ESW P.C.B.
LCD P.C.B.
CPC P.C.B.
CPR P.C.B.
CPL P.C.B.
N16
14
24
25
N6
N6
13
N7
49
N9
N11
N10
48
S1
MVOL P.C.B.
FDCN P.C.B.
20
21
26
22
N9
N12
N6
CPSL P.C.B.
SY-FD20 (Option)
N22
N22
28
N23
N24
N23
N24
EJ II P.C.B.
N25
MAIN P.C.B.
N26
N27
N19
29
DRV P.C.B.
PSM P.C.B.
N25
N26
N27
30
N3
30
33 Ass'y
N3
N36
N61
32
N40
N39
N31
40-1
N32
N3
D1
40-2
40 Ass'y
N34
N33
N35
N23
36
35
N34
N35
N23
31
N61
N36
N27
34 Ass'y
N38
34-1
42
N41
41
N42
60
JACK P.C.B.
N3
37
N28
N29
N30
38
39
N44
N44
62
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N15
N16
N6
N18
N9
N17
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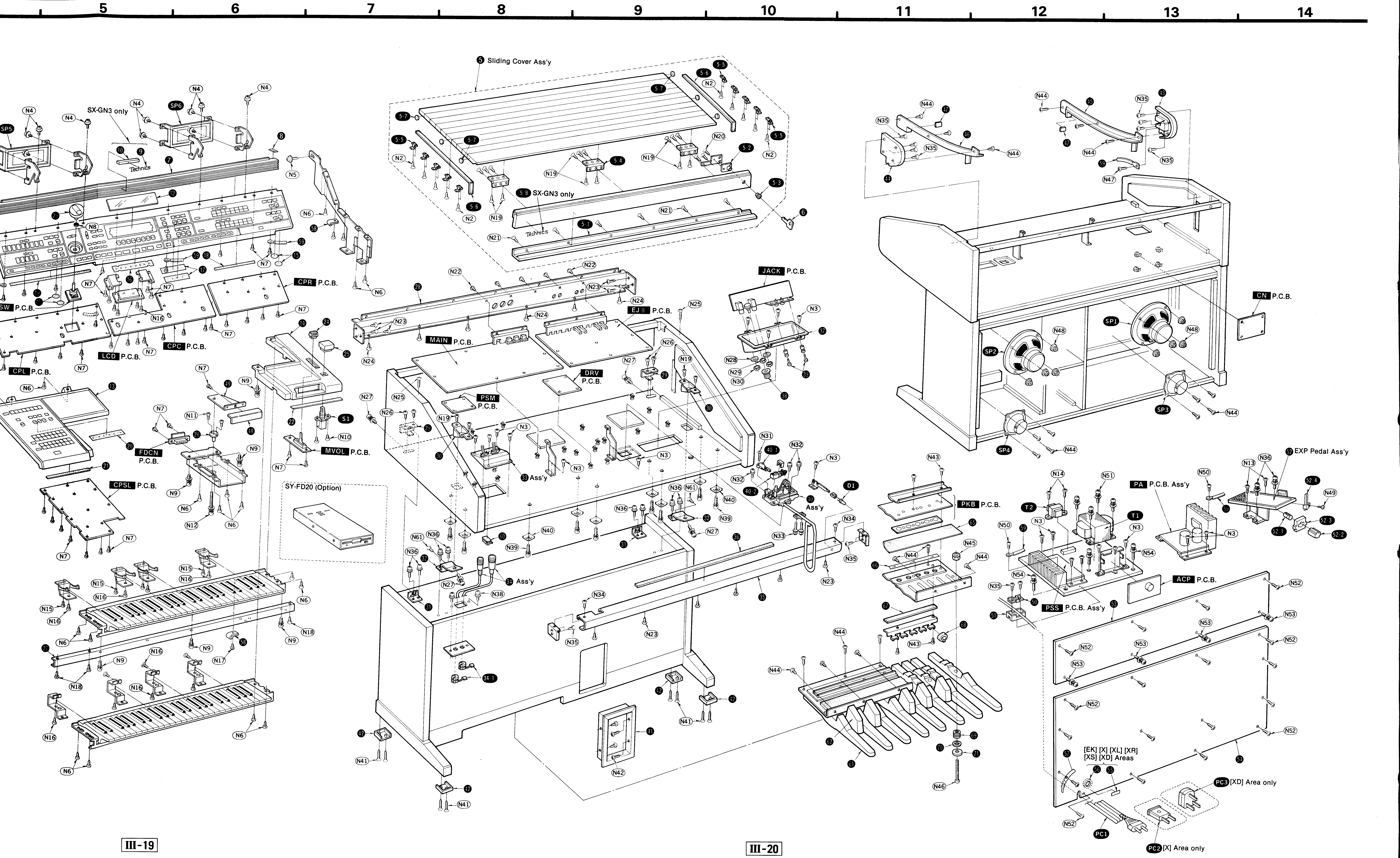
N18
N16
N6

Note: The cabinet assembly parts will not be supplied as repair parts.


5
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14
5 Sliding Cover Ass'y
5-1
5-2
5-3
5-4
5-5
5-6
5-7
5-8 SX-GN3 only
SX-GN3 only
Technics
SP1
SP2
SP3
SP4
SP5
SP6
SW P.C.B.
CPL P.C.B.
LCD P.C.B.
CPC P.C.B.
CPR P.C.B.
FDCN P.C.B.
CPSL P.C.B.
MVOL P.C.B.
MAIN P.C.B.
PSM P.C.B.
DRV P.C.B.
EJ II P.C.B.
JACK P.C.B.
CN P.C.B.
PKB P.C.B.
PA P.C.B. Ass'y
ACP P.C.B.
PSS P.C.B. Ass'y
52 EXP Pedal Ass'y
52-1
52-2
52-3
52-4
33 Ass'y
34 Ass'y
34-1
40 Ass'y
40-1
40-2
S1
D1
T1
T2
SY-FD20 (Option)
[EK] [X] [XL] [XR]
[XS] [XD] Areas
PC1
PC2 [X] Area only
PC3 [XD] Area only
N2
N3
N4
N5
N6
N7
N8
N9
N10
N11
N12
N13
N14
N15
N16
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SX-GN3 CABINET & CHASSIS PARTS

(SX-GN3)

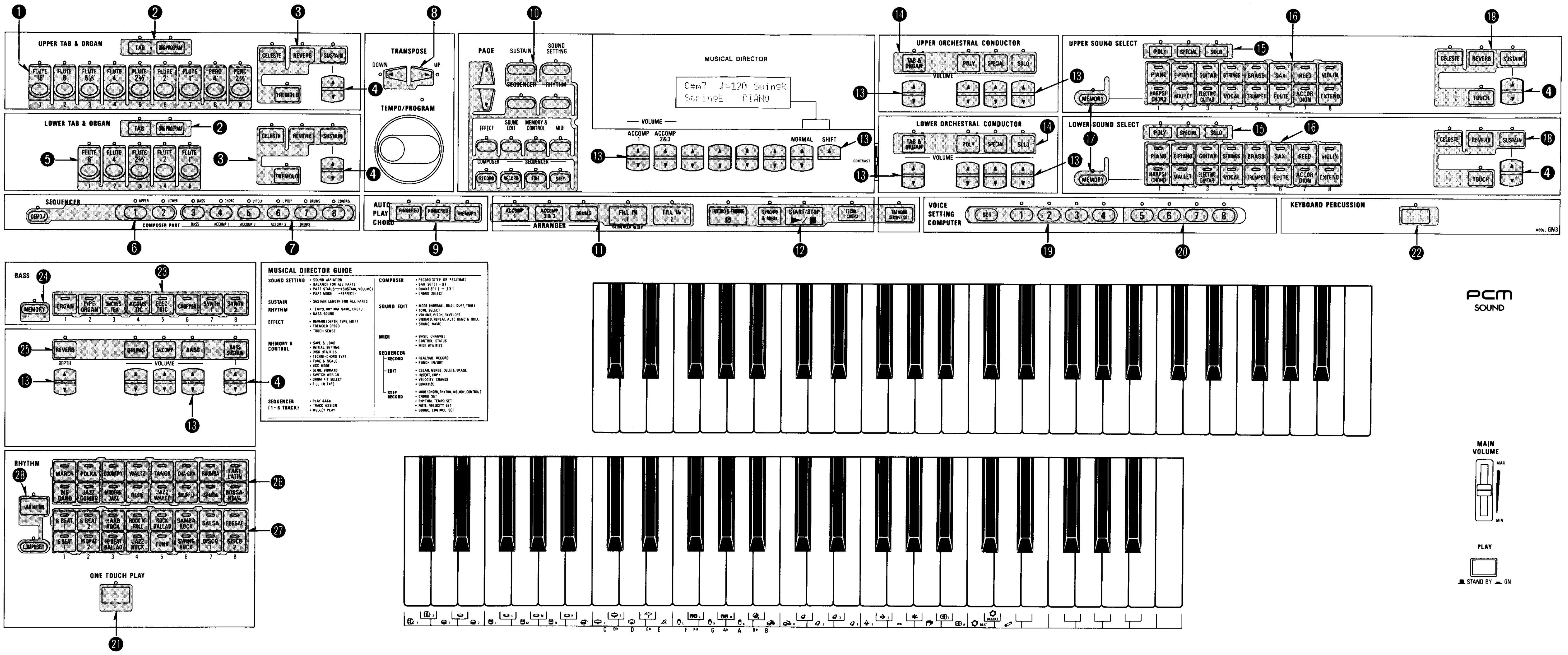
	Ref. No.	Part No.	Description	Per/Set
			POWER SWITCH	
○	S1 ⚠	QSPG1003AA	Power Switch	1
			SPEAKERS	
	SP1, 2	EAS20PL255C	20cm, 8Ω	2
	SP3, 4	EAS65PH31A	6.5cm, 8Ω	2
	SP5, 6	EAS15S06A	6×13cm, 16Ω	2
			TRANSFORMERS	
○	T1 [M] [XM] [MC] ⚠	QTPG1P003A	Power Transformer, [M], [XM], [MC] only	1
○	T1 ⚠	QTPG1P002A	Power Transformer	1
○	T2 ⚠	QTPG1J001A	Power Transformer	1
			POWER CORD, PLUGS	
	PC1 [M] [XM] [MC] ⚠	SJAG22	AC Power Cord, [M], [XM], [MC] only	1
	PC1 [XL] [XR] ⚠	SJAG23	AC Power Cord, [XL], [XR] only	1
	PC1 [EK] [XS] [XD] ⚠	SJAG25	AC Power Cord, [EK], [XS], [XD] only	1
	PC1 ⚠	SJAG24	AC Power Cord, Others	1
	PC2 [X] ⚠	SJP5213-1	Attachment Plug, [X] only	1
	PC3 [XD] ⚠	SJPG1350A	Power Plug, [XD] only	1
			POWER INDICATOR	
	D1	LN29RP	LED, Power Indicator	1
			CABINET AND OTHERS	
○	1	QGAG2003AA	Clear Panel, Music Rack	1
○	2	QGAG1003AA	Ornament	1
	3	SBLG230B	Stay	2
○	4	QKQGA005AA	Top Cover Ass'y	1
	4-1	[SHRG9301A	Sleeve	2
○	5	QKQGF001AB	Sliding Cover Ass'y	1
○	5-1	┌ QGKG0010AB	Ornament	1
	5-2	│ SBEG30A	Lock	1
	5-3	│ SBEG40A	Staple	1
	5-4	│ SBHG6007-1	Hinge	3
	5-5	│ SHRG9930A	Catch, Guide Rail	10
○	5-6	│ QMFG1001AA	Felt	2
	5-7	│ SHSG119	Felt	6
	5-8	└ SGBG150A	Badge	1
	6	SBEG60A	Key	1
○	7	QGKG0002AA	Ornament	1
○	7 [M] [XM]	QGKG0002AB	Ornament	1
	8	SHSG1830A	Felt	2
	9	SGBG140A	Badge	1
○	10	QKQGZ019AA	Bracket	1
○	11	QGPG0001CD	Upper Control Panel	1
○	11 [M] [XM]	QGPG0001CF	Upper Control Panel	1
○	12	QKWG001AC	Display Cover Panel	1
○	13	QGPG0002CA	Lower Control Panel, Left	1
○	13 [M] [XM]	QGPG0002CC	Lower Control Panel, Left	1
○	14	QGPG0003AD	Lower Control Panel, Right	1
○	14 [M] [XM]	QGPG0003AC	Lower Control Panel, Right	1
○	15	QMFG4006BB	Felt	4
○	16	QMFG4004BB	Felt	1
○	17	QMFG4005BB	Felt	2
○	18	QMFG4011AA	Felt	1
	19	SHSG5810A	Felt	1
○	20	QMFG4007BB	Felt	1
○	21	QMFG4001AA	Felt	1
○	22	QMFG4002AA	Felt	1

	Ref. No.	Part No.	Description	Per/Set
○	23	SBNG4060B	Knob, Tempo/Program	1
	24	SBNG7031A	Knob, Main Volume	1
	25	SBCG110B	Button, Power Switch	1
	26	SHRG9920A	Spacer	1
○	27	QGKG0007AA	Ornament, Keyboard	1
○	28	QGKG0008BB	Jack Panel	1
	29	SUWG3000A	Bracket	2
	30	SUWG3010A	Bracket	2
	31	SUWG3020A	Bracket	2
	32	SUWG3031A	Bracket	2
○	33	QEXG13004ZA	Cable with Bracket	1
○	34	QEXG13003ZA	Cable with Bracket	1
	34-1	[SHRG1160A	Bushing	2
○	35	QKSGE003AB	Front Panel	1
	36	SHSG3050A	Felt	1
	37	SMKG1583A	Jack Panel	1
	38	SBNG4010A	Knob, Mic Volume	1
	39	SHR401-1	Latch	2
	40	SXVG3031B	Knee Lever Ass'y	1
	40-1	┌ SSLG1005A	Leaf Switch	1
	40-2	└ SSHG1020A	Push Switch	1
	41	SGXG1100A	Ornament, Expression	1
	42	SHRG2120A	Foot	4
	43	SKEG7640A	Guide Rail	1
	44	SKEG7650A	Guide Rail	1
	45	SKEG7660A	Guide Rail	1
	46	SKEG7670A	Guide Rail	1
	47	SHSG3571A	Felt	2
	48	QGPG1004AA	Cover	1
	48 [M] [XM]	QGPG1004AB	Cover	1
	49	QMAG0008AA	Bracket	1
	50	SHRG1110A	Cord Clamper	1
	51	SHRG1120A	Cord Clamper	1
	52	SXVG5130A	Exprssion Pedal Ass'y	1
	52-1	┌ XAMR55P	Lamp	1
	52-2	│ RJS205ZA	Lamp Socket	1
	52-3	│ SHGG908	Lamp Holding Rubber	1
	52-4	└ SSHG14	Foot Switch	1
○	53	QKQGD001AB	Rear Board (Upper)	1
○	54 [EK] [X] [XL] [XR] [XS] [XD]	QKUG1001BB	Rear Board (Lower), [EK], [X], [XL], [XR], [XS], [XD] only	1
○	54	QKUG1001AB	Rear Board (Lower), Others	1
○	55	SGKG3190A	Label (VOLT ADJ.)	1
	56	SHGG8510A	Spacer	1
	57	SHRG1030A	Cord Band	1
	58	SHRGA9060A	Cord Clamper	2
	59	SUWG219	Binder	7
	60	SHRG9620A	Cord Clamper	1
			PEDAL KEYBOARD	
○	61	STBG1164A	Long Key (Brown)	8
	62	STBG2052A	Short Key (Black)	5
	65	SHSG4770A	Felt	1
○	66	QMRG2005AA	Insulator	1
	67	SHSG1600B	Felt	1
	68	SHSG1460A	Felt	13
	69	SUSG180A	Spring	13
	70	SHGG8130A	Rubber	13
	71	SHRG9240A	Spacer	13
			MANUAL KEYBOARD	
○	72	STBGA1160A	White Key (C & F Keys)	8
○	73	STBGA1170A	White Key (D Key)	4
○	74	STBGA1180A	White Key (E & B Keys)	8
○	75	STBGA1190A	White Key (G Key)	4
○	76	STBGA1200A	White Key (A Key)	4

(SX-GN3)

	Ref. No.	Part No.	Description	Per/Set
○	77	STBGA1210A	White Key (Top Octave C Key)	1
○	78	STBG2930A	Black Key	20
○	79	STBG9420A	Key Support	3
○	80	STBG9440A	Key Support	1
○	81	QMBG001BA	Spring	49
	82	SHGG9050A	Key Guide Rubber	49
○	83	QMFG1005AA	Felt	1
○	84	STBG9410A	P.C.B. Holder	3
○	85	STBG9430A	P.C.B. Holder	1
○	86	SSPG1A	Actuator	3
○	87	SSPG2A	Actuator	1
○	88	QMFG1006AB	Felt	1
○	89	SHRGA5810A	Membrane Sheet	3
○	90	SHRGA5820A	Membrane Sheet	1
			BENCH	
	91	SKZGC850A	Top Cover Ass'y	1
	91-1	SBHG50B	Hinge	2
	91-2	SBLG70A	Stay	1
○	92	SKZGC471D	Leg	4
	93	SBEG190A	Spanner	1
○	94	SKZGC860C	Box	1
			SCREW & WASHERS	
	N2	XTS4+12A	Screw	20
	N3	XTB35+12A	Screw	22
	N4	XTWSG2	Screw with Washer	12
	N5	SNEG2400A	Screw with Washer	2
	N6	XTB4+12A	Screw	24
	N7	XTW3+10Q	Screw	63
	N8	XNS9	Nut	1
	N9	XYN5+C10	Screw with Washer	6
	N10	SNEG740A	Screw	2
	N11	XTS3+6B	Screw	2
	N12	XYN4+F40	Screw with Washer	1
	N13	XTT4+16AFZ	Screw	2
	N14	XTB4+14A	Screw	2
	N15	XTW3+20Q	Screw	4
	N16	XTB3+5C	Screw	15
	N17	XTW3+8JFZ	Screw	1
	N18	XTT4+10AFZ	Screw	3
	N19	XTS35+12A	Screw	19
	N20	XTS3+12A	Screw	3
	N21	XTS3+10AFVC	Screw	6
	N22	XTW3+10JFVC	Screw	5
	N23	XTT35+10AFVC	Screw	12
	N24	XTT4+16AFVC	Screw	6
	N25	XTT4+30A	Screw	2
	N26	XTB35+12A	Screw	4
	N27	SNEG2270A	Screw with Washer	4
	N28	SNEG770A	Washer	2
	N29	SNE4021-1	Nut	1
	N30	XNS12FZ	Nut	2
	N31	XTN2+10FFX	Screw	1
	N32	XYN3+C12	Screw with Washer	3
	N33	XYN3+F16FZ	Screw with Washer	2
	N34	XTB3+8BFVC	Screw	2
	N35	XTB35+20A	Screw	14
	N36	XYN4+F20FZ	Screw with Washer	10
	N37	XTB35+14FVC	Screw	10
	N38	XYN3+F20FZ	Screw with Washer	2
	N39	XYN5+C25FZ	Screw with Washer	9
	N40	SNEG150B	Washer	9
	N41	XTB35+25A	Screw	8
	N42	XTB3+14AFZ	Screw	4
	N43	XTB3+6B	Screw	11
	N44	XTT4+14A	Screw	23
	N45	XNG5BS	Nut	13
	N46	SNEG360A	Bolt	13
	N47	XTV3+10G	Screw	1
	N48	SNE499-1	Nut	8
	N49	XTN26+6B	Screw	1
	N50	XTV3+10C	Screw	2
	N51	XYN4+F30	Screw with Washer	4
	N52	XTT4+30AFVC	Screw	18
	N53	XYN4+F10FVC	Screw with Washer	4
	N54	XYN5+F30	Screw with Washer	3
	N56	XTS3+14A	Screw	4
	N57	XNH10G	Nut	4
	N58	XWB10B	Washer	4
	N59	XTW3+6J	Screw	12
	N60	XTW3+10JFVC	Screw	28
	N61	XTB35+14AFZ	Screw	2
	N64, 65	XTT4+14AFVC	Screw	7
	N66	XTB3+14AFVC	Screw	2

■ BUTTON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CONTRAST
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LOWER ORCHESTRAL CONDUCTOR
UPPER SOUND SELECT
LOWER SOUND SELECT
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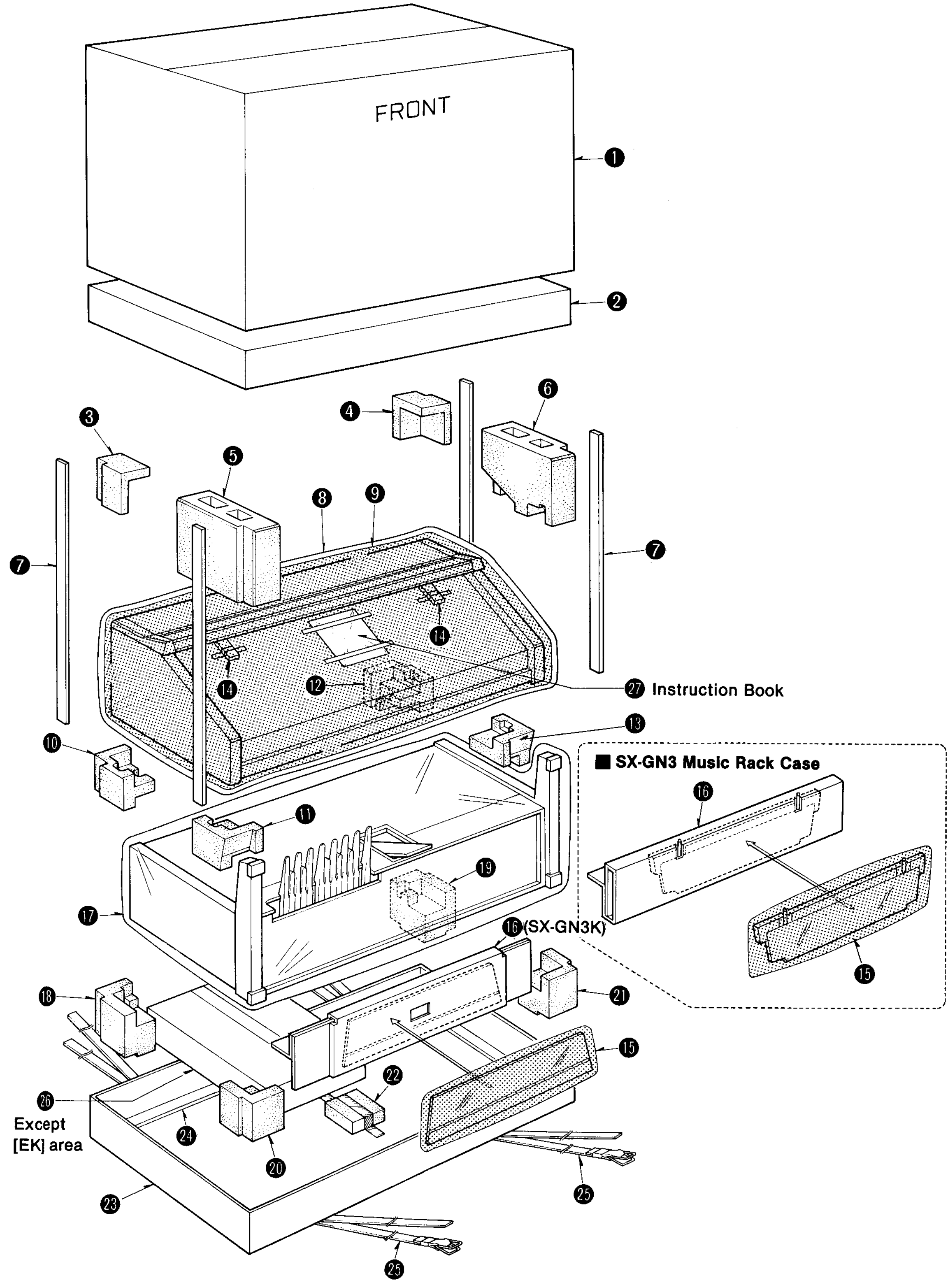
SX-GN3K BUTTON

Ref. No.	Part No.	Description	Per/Set
○ 1	QGUG1009AA01	Button	1
○ 2	QGUG1008AA01	Button	2
○ 3	QGUG1011AA02	Button	2
○ 4	QGUG1027AB01	Button	5
○ 5	QGUG1010BA01	Button	1
○ 6	QGUG1020BA01	Button	1
○ 7	QGUG1005AA02	Button	1
○ 8	QGUG1012AA01	Button	1
○ 9	QGUG1014AA01	Button	1
○ 10	QGUG1013AA01	Button	1
○ 11	QGUG1021AA01	Button	1
○ 12	QGUG1022AA01	Button	1
○ 13	QGUG1027AA01	Button	20
○ 14	QGUG1015BA01	Button	2
○ 15	QGUG1018BA01	Button	2
○ 16	QGUG1028CA01	Button	2
○ 17	QGUG1017AA01	Button	2
○ 18	QGUG1019BA01	Button	2
○ 19	QGUG1023AA01	Button	1
○ 20	QGUG1016AA01	Button	1
○ 21	QGUG1001AA	Button	1
○ 22	QGUG1025AA	Button	1
○ 23	QGUG1029BA01	Button	1
○ 24	QGUG1007AA01	Button	1
○ 25	QGUG1006BA01	Button	1
○ 26	QGUG1029AA02	Button	1
○ 27	QGUG1029AA01	Button	1
○ 28	QGUG1003AA01	Button	1

SX-GN3 BUTTON

Ref. No.	Part No.	Description	Per/Set
○ 1	QGUG1009AA01	Button	1
○ 2	QGUG1008AA01	Button	2
○ 3	QGUG1011AA02	Button	2
○ 4	QGUG1027AB01	Button	5
○ 5	QGUG1010BA01	Button	1
○ 6	QGUG1020BA01	Button	1
○ 7	QGUG1005AA02	Button	1
○ 8	QGUG1012AA01	Button	1
○ 9	QGUG1014AA01	Button	1
○ 10	QGUG1013AA01	Button	1
○ 11	QGUG1021AA01	Button	1
○ 12	QGUG1022AA01	Button	1
○ 13	QGUG1027AA01	Button	23
○ 14	QGUG1015BA01	Button	2
○ 15	QGUG1018BA01	Button	2
○ 16	QGUG1028CA01	Button	2
○ 16 M XM	QGUG1028CB01	Button	2
○ 17	QGUG1017AA01	Button	2
○ 18	QGUG1019BA01	Button	2
○ 19	QGUG1023AA01	Button	1
○ 20	QGUG1016AA01	Button	1
○ 21	QGUG1001AA	Button	1
○ 22	QGUG1025AA	Button	1
○ 23	QGUG1029BA01	Button	1
○ 23 M XM	QGUG1029BB01	Button	1
○ 24	QGUG1007AA01	Button	1
○ 25	QGUG1006BA01	Button	1
○ 26	QGUG1029AA02	Button	1
○ 26 M XM	QGUG1029AB02	Button	1
○ 27	QGUG1029AA01	Button	1
○ 27 M XM	QGUG1029AB01	Button	1
○ 28	QGUG1003AA01	Button	1

PACKING



SX-GN3K PACKING PARTS

Ref. No.		Part No.	Description	Per/Set
○	1	QPGG0012AA	Carton Box	1
○	2	QPGG0007AA	Top Case	1
○	3	QPNG0020AA	Pad	1
○	4	QPNG0021AA	Pad	1
○	5	QPNG0018AA	Pad	1
○	6	QPNG0019AA	Pad	1
○	7	QPQG002AA	Prop	4
	8	SPHG220A	Polyethylene Bag	1
	9	SPHG620A	Protection Sheet	1
○	10	QPNG0016AA	Pad	1
○	11	QPNG0014AA	Pad	1
○	12	QPNG0017AA	Pad	1
○	13	QPNG0015AA	Pad	1
	14	SPNG5161A	Spacer	2
	15	SPHG2020A	Protection Sheet	1
○	16	QPGG0005AA	Music Rack Case	1
	17	SPHG770A	Polyethylene Bag	1
○	18	QPNG0024AA	Pad	1
○	19	QPNG0025AA	Pad	1
○	20	QPNG0022AA	Pad	1
○	21	QPNG0023AA	Pad	1
	22	SPNG5749A	Pad	1
○	23	QPGG0006AA	Bottom Case	1
○	24	QPQG001AA	Frame	1
	25	SPSG40A	Band	4
	26	SPEG1167A	Packing Case, Bench (Except [EK])	1
			INSTRUCTION BOOK	
○	27 N	QQFGGN5KAA	Instruction Book, [N] only	1
○	27 EN	QQFGGN5KBA	Instruction Book, [EN] only	1
○	27 EK EP X XL XR XS XD	QQFGGN5KCA	Instruction Book, [EK], [EP], [X], [XL], [XR], [XS], [XD] only	1
○	27 EZ EW EI EB EF EH	QQFGGN5KDA	Instruction Book, [EZ], [EW], [EI], [EB], [EF], [EH] only	1

SX-GN3 PACKING PARTS

Ref. No.		Part No.	Description	Per/Set
○	1	QPGG0020AA	Carton Box	1
○	2	QPGG0007AA	Top Case	1
○	3	QPNG0020AA	Pad	1
○	4	QPNG0021AA	Pad	1
○	5	QPNG0037AA	Pad	1
○	6	QPNG0038AA	Pad	1
○	7	QPQG002AA	Prop	4
	8	SPHG220A	Polyethylene Bag	1
	9	SPHG620A	Protection Sheet	1
○	10	QPNG0016AA	Pad	1
○	11	QPNG0035AA	Pad	1
○	12	QPNG0017AA	Pad	1
○	13	QPNG0036AA	Pad	1
	14	SPNG5161A	Spacer	2
	15	SPHG2020A	Protection Sheet	1
○	16	SPNG2024B	Music Rack Case	1
	17	SPHG770A	Polyethylene Bag	1
○	18	QPNG0024AA	Pad	1
○	19	QPNG0025AA	Pad	1
○	20	QPNG0022AA	Pad	1
○	21	QPNG0023AA	Pad	1
	22	SPNG5749A	Pad	1
○	23	QPGG0006AA	Bottom Case	1
○	24	QPQG001AA	Frame	1
	25	SPSG40A	Band	4
	26	SPEG1168B	Packing Case, Bench (Except [EK])	1
			INSTRUCTION BOOK	
○	27 M	QQFGGN5EA	Instruction Book, [M] only	1
○	27 EN	QQFGGN5KBA	Instruction Book, [EN] only	1
○	27 EK EP X XL XR XS MC XM XD	QQFGGN5KCA	Instruction Book, [EK], [EP], [X], [XL], [XR], [XS], [XD], [XM], [MC] only	1
○	27 EZ EW EI EB EF EH	QQFGGN5KDA	Instruction Book, [EZ], [EW], [EI], [EB], [EF], [EH] only	1